Panasonic®

Getting started

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Operating Instructions
DVD Recorder
Model No. **DMR-XW350**

DIGA

Dear customer
Thank you for purchasing this product.
For optimum performance and safety, please read these instructions carefully.

Before connecting, operating or adjusting this product, please read the instructions completely.
Please keep this manual for future reference.

DVD VIDEO RAM **DVD RW/R** **COMPACT disc DIGITAL AUDIO** **RAM COMPATIBLE RECORDER** **SDHC™** **AVCHD™**

HDMI™ HIGH-DEFINITION MULTIMEDIA INTERFACE **VIERA Link** **VIERA CAST™** **gracenote®**

DVB Digital Video Broadcasting®
Trademark of the DVB Digital Video Broadcasting Project
Declaration of Conformity No. 6628, 19th February 2009

This DVD Recorder is for viewing and recording free to view channels only, not pay TV or encrypted channels.

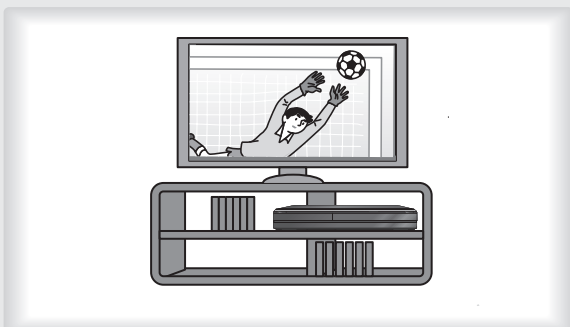| Region management information	
DVD-Video The unit plays DVD-Video marked with labels containing the region number "**4**" or "**ALL**".	**Example:** ④ ALL ②③④

Characteristics of this unit

Record with High Definition

It is possible to record in high definition quality when the broadcast is high definition.
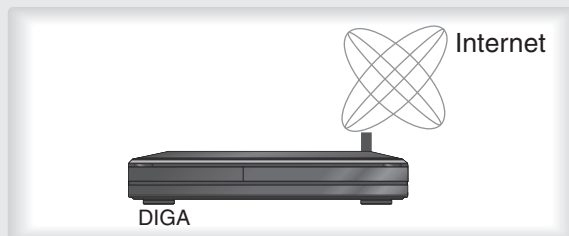
➡ 7

VIERA CAST™

You can access a selection of Internet services from the Home screen with VIERA CAST, for example, YouTube, Picasa Web Albums. (Current as of June 2009)
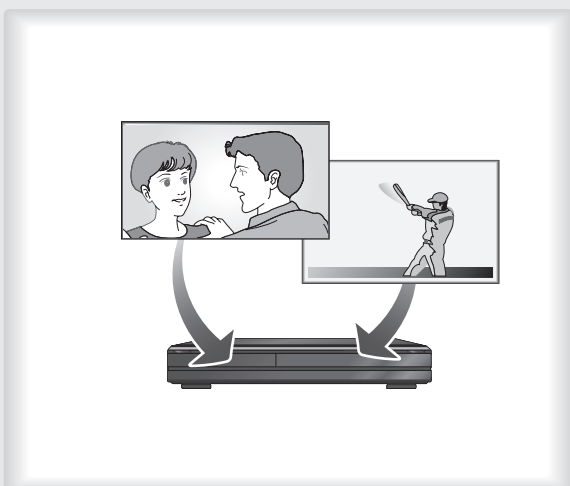
➡ 73

• Enjoying VIERA CAST™

Internet

DIGA

2 programmes Simultaneous Recording

It is possible to record 2 programmes being broadcasted at the same time.

➡ 29

VIERA Link "HDAVI Control™"

Operation of this unit can be controlled by the remote control of the TV (VIERA) by connecting with the HDMI cable to the TV (VIERA).

➡ 74

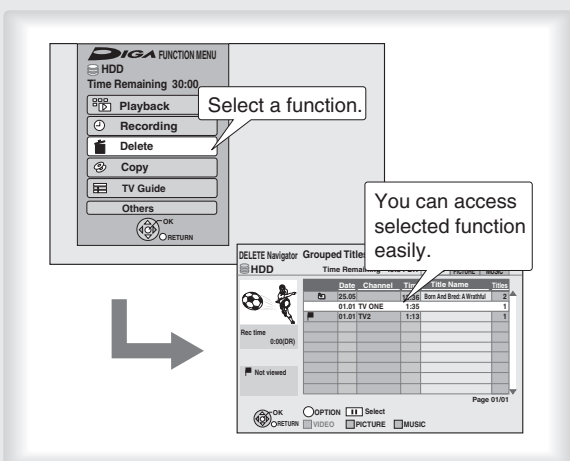• Pause Live TV programme
• Direct TV Recording

VIERA

VIEFA Link

DIGA

Easy access to various functions

You can access the main function quickly and easily from FUNCTION MENU Display.

➡ 13

• FUNCTION MENU Display

DIGA FUNCTION MENU
HDD
Time Remaining 30:00
Playback — Select a function.
Recording
Delete
Copy
TV Guide — You can access selected function easily.
Others
OK
RETURN

DELETE Navigator Grouped Title
HDD   Time Remaining
                   Date Channel Ti   Title Name
                   25.05   Born And Bred: A Wrathful   2
                   01.01 TV ONE   1:35   1
                   01.01 TV2   1:13   1
Rec time
0:00(DR)
Not viewed
                                              Page 01/01
OK OPTION Select
RETURN VIDEO PICTURE MUSIC

Included accessories

Please check and identify the supplied accessories.
(Product numbers correct as of June 2009. These may be subject to change.)

☐   ☐   ☐   ☐   ☐

(N2QAYB000344)

1 Remote control

2 Batteries
for remote control

1 AC mains lead
For use with this unit only.
Do not use it with other
equipment.
Also, do not use cords for
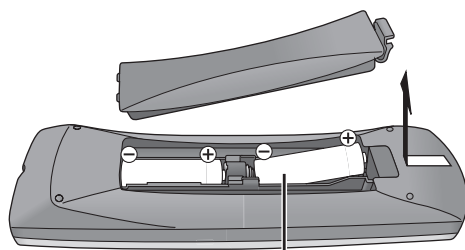other equipment with this
unit.

1 RF coaxial cable

1 Audio/video cable

The remote control information

Batteries
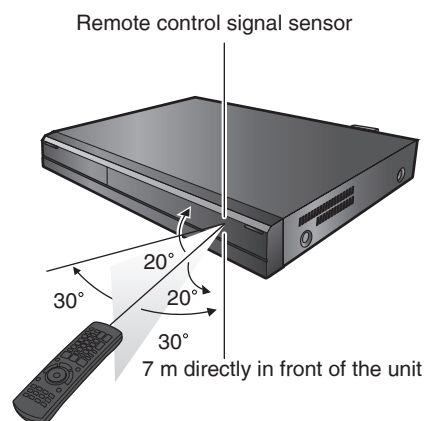• Insert so the poles (+ and –) match those in the remote control.

R6/LR6, AA

• Use alkaline or manganese batteries.
• Do not mix old and new batteries.
• Do not use different types at the same time.
• Do not heat or expose to flame.
• Do not leave the batteries in an automobile exposed to direct
sunlight for a long period of time with doors and windows closed.
• Do not take apart or short circuit.
• Do not attempt to recharge alkaline or manganese batteries.
• Do not use batteries if the covering has been peeled off.

Mishandling of batteries can cause electrolyte leakage which can
damage items the fluid contacts and may cause a fire.

Remove if the remote control is not going to be used for a long
period of time. Store in a cool, dark place.

Remote control operations (➡ 12)

Use

Remote control signal sensor

20°

30°   20°

30°

7 m directly in front of the unit

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About descriptions in these operating instructions
• Pages to be referred to are indicated as "➡ ○○".

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RQT9487
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HDD and disc information

This unit can record to HDD and copy to the following recording media.

Internal

HDD **DVD-RAM** **DVD-R** **DVD-R DL** **DVD-RW**

+R **+R DL** **+RW**

Recordings can only be made to HDD in DR mode first, with the same quality as broadcasted, then they can be copied to discs.

Instant record

It can only record to HDD by pressing [● REC].

REC

HDD **Discs**
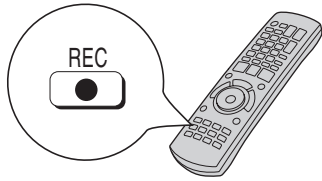
Can do *Cannot do* Record to the HDD and then copy to the disc.

Timer record

It can only record to HDD when using timer recording.

Timer Recording	Remain HDD	30:30 DR				FRI 23.01.2009 8:59
All DVB Channels						
Channel	Date/Week	Start	Stop	Drive	Mode	
21	SAT 10.01	08:59	--	HDD	DR	►
◄ [Prog.Name]					Programme Name	
TVNZ SPORT EXTRA						
RETURN	Favourites/AV	1 day/Weekly				

HDD **Discs**
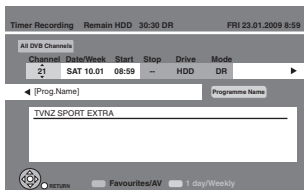
Can do *Cannot do* Record to the HDD and then copy to the disc.

Recording and copying programmes

This unit will record the high definition quality programmes* **of the digital broadcast onto the HDD with high quality image and audio as they were broadcasted.**
If copying is performed on those programmes, they are copied in standard definition.

Programmes in high definition (HD) quality

Goal!

Recording

HDD

Goal!

DR mode

- • **Record as high definition (HD) quality (the same quality of the broadcast)**
- • **All subtitles and multiple audio are recorded (selectable during playback).**

COPY

Time and quality of recording varies depending on the recording mode. (➡ 28, Recording modes)

Discs

XP, SP, LP, EP, FR mode

- • **Copy as standard definition (SD) quality**
- • **Copy in Normal Speed mode when copying the title recorded in DR mode on HDD**
- • **Subtitles cannot be copied.**
- • **Only one audio can be copied for the multiple audio.**

※ It will also record standard definition programmes of the digital broadcast with the same quality of image and audio as broadcasted.

HDD and discs you can use for recording and play

(○: Possible, –: Impossible)

Disc type Standard symbol	Hard disk drive (HDD) HDD
Data that can be recorded and played	Video/Still picture/Music
Quality in which video is recorded	High definition (HD) quality/Standard definition (SD) quality
Recording mode in which video is recorded※	DR, HG, HX, HE, HL, XP, SP, LP, EP, FR
Rewritable	○
Timer recording	○

※ Recording modes that can be selected differ depending on the recording methods. For details, please refer to the respective operating.

Disc type	DVD-RAM	DVD-R	DVD-R DL	DVD-RW
Standard symbol	RAM	-R before finalisation DVD-V after finalisation	R DL -R DL before finalisation DVD-V after finalisation	-RW(V) before finalisation DVD-V after finalisation
Data that can be recorded and played	Video Still picture	Video		
Quality in which video is recorded	Standard definition (SD) quality			
Recording mode in which video is recorded※	XP, SP, LP, EP, FR			
Rewritable	○	–		○
Timer recording	–			
Play on other players	RAM can be played back on Panasonic DVD recorders and DVD-RAM compatible DVD players.	• Finalisation needed for playback on other equipment. • -R DL can be played back only on equipment compatible with this disc.		
Note	Cartridge discs can be used (➡ 80).	–		

Disc type	+R	+R DL	+RW
Standard symbol	+R before finalisation DVD-V after finalisation	+R DL before finalisation DVD-V after finalisation	+RW
Data that can be recorded and played	Video		
Quality in which video is recorded	Standard definition (SD) quality		
Recording mode in which video is recorded※	XP, SP, LP, EP, FR		
Rewritable	–		○
Timer recording	–		
Play on other players	• Finalisation needed for playback on other equipment. • +R DL can be played back only on equipment compatible with this disc.		+RW can be played back only on equipment compatible with this disc. • If the disc failed to play on other equipment, we recommend you create top menu (➡ 82).
Note	• +R +R DL recorded with this unit or with another Panasonic DVD Recorder may be incompatible. However, discs that are finalised are compatible and can be played. • 8X Speed +RW disc is not supported.		

※ Recording modes that can be selected differ depending on the recording methods. For details, please refer to the respective operating.

Note
- Discs recorded on equipment other than this unit may not be used for recording on this unit.
- This unit cannot record NTSC signals to discs that already have PAL signal recordings. (However, both types of programmes can be recorded onto the HDD.)
- You may not be able to record depending on the condition of the discs and you may not be able to play due to the condition of the recording.
- Recording-restricted or copy-restricted programmes may not be recorded depending on the type of discs (including HDD) or recording mode.

■ Regarding 8 cm Disc
This unit cannot record or edit the 8 cm DVD-RAM, DVD-R, DVD-R DL, DVD-RW, +R DL or +RW.
Only playback or copy to the HDD is possible.

Play-only discs

Disc type	Logo	Standard symbol	Uses
DVD-Video	DVD VIDEO DVD VIDEO	`DVD-V`	High quality movie and music discs
DVD-RW (DVD Video Recording format)	DVD RW	`-RW(VR)`	DVD-RW video recorded on another DVD recorder • By formatting (➡ 81) the disc, you can record onto it in DVD-Video format. • It may be necessary to finalise the disc on the equipment used for recording.
DVD-R DVD-R DL	DVD R R4.7 DVD R R DL	DivX, MP3, JPEG	• DVD-R* and DVD-R DL* with video recorded in DivX • DVD-R* and DVD-R DL* with music recorded in MP3 • DVD-R* and DVD-R DL* with still pictures recorded in JPEG
CD	COMPACT disc DIGITAL AUDIO	`CD`	• Recorded audio and music (including CD-R/RW*) You can copy tracks to this unit's HDD.
	–	DivX, MP3, JPEG	• CD-R* and CD-RW* with video recorded in DivX • CD-R* and CD-RW* with music recorded in MP3 • CD-R* and CD-RW* with still pictures recorded in JPEG
Disc with high definition video (AVCHD) recorded by Panasonic's video camera, etc.	–	`AVCHD`	**Following disc can be played.** • **DVD-RAM, DVD-R, DVD-R DL, DVD-RW, +R, +R DL, +RW** • Finalise (➡ 114) the DVD-R, DVD-R DL, DVD-RW, +R or +R DL with the same equipment that was used to record.

* Close the session after recording. Play may be impossible on some discs due to the condition of the recording.
• The producer of the disc can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc's instructions carefully.
• Operation and sound quality of CDs that do not conform to CD-DA specifications (copy control CDs, etc.) cannot be guaranteed.

Discs that cannot be played

• Blu-ray Disc (BD-Video, BD-RE, BD-R)
• 2.6 and 5.2 GB DVD-RAM, 12 cm
• 3.95 and 4.7 GB DVD-R for Authoring
• DVD-R, DVD-R DL, DVD-RW, +R, +R DL recorded on another unit and not finalised (➡ 114).
• DVD-Video with a region number other than "4" or "ALL"
• DVD-Audio
• HD DVD
• DVD-ROM, +R (8 cm), CD-ROM, CDV, CD-G, Photo CD, CVD, SVCD, SACD, MV-Disc, PD, Video CD, etc.

USB memory and card information

USB memories you can use on this unit

USB memories can only be used for playback or copy to HDD or discs.

Compatible USB memories	**USB memories which are defined as USB mass storage class and digital camera that use PTP protocol:**
	  –USB memories that support USB 1.0/1.1 and USB 2.0 Full Speed/High Speed.
	• USB memories of up to 128 GB can be used.
	• USB memories that support bulk only transfer.
	  CBI (Control/Bulk/Interrupt) is not supported.
	• Digital Cameras which require additional programme installation when connected to a PC are not supported.
	• MTP (Media Transport Protocol) device is not supported.
	• A multi-port USB card reader is not supported.

Format	FAT16 and FAT32 file systems are supported. • UDF/NTFS/exFAT file system is not supported. • Depending on the sector size, some files may not work. • Only the first partition on USB memories with multi-partition is supported.
Indicated in these instructions by	`USB`
Data that can be played	**DivX, MP3, Still pictures (JPEG)**

Data that can be copied	**MP3**
	• It can be copied to HDD.
	
	Still pictures (JPEG)
	• It can be copied to HDD or DVD-RAM.
	
	SD Video (MPEG2 format)
	HD Video (AVCHD format)
	• If a Panasonic's video camera, etc. is connected to this unit's USB port:
	  – you can copy the SD Video shot with the camera to this unit's HDD or DVD-RAM. (➡ 57)
	  – you can copy the HD Video shot with the camera to this unit's HDD. (➡ 56)

• Despite meeting the conditions mentioned above, there may be USB memories that cannot be used for this unit.

Note
• This unit's USB port does not support bus-powered USB device.

Cards you can use on this unit

SD cards can be used for playback, copy to HDD or discs or copy from HDD or discs.

Type	**SD Memory Card**[※1] **(from 8 MB to 2 GB)** **SDHC Memory Card**[※2] **(from 4 GB to 32 GB)** [※1] Including miniSD Card and microSD Card [※2] Including miniSDHC Card and microSDHC Card The card types mentioned above will be referred to as "SD card" in these operating instructions.
Indicated in these instructions by	`SD`
Data that can be played	**Still pictures (JPEG)** **HD Video (AVCHD format)**
Data that can be copied	**Still pictures (JPEG)** • It can be copied to/from HDD or DVD-RAM. **SD Video (MPEG2 format)** **HD Video (AVCHD format)** • SD Video shot with a Panasonic's video camera, etc. can be copied to the HDD or DVD-RAM. (➡ 57) • HD Video shot with a Panasonic's video camera, etc. can be copied to the HDD. (➡ 56)
Instructions	**You can insert directly into the SD card slot.** [※1] A miniSD Card and a microSD Card must be used with the adaptor that comes with the card. [※2] A miniSDHC Card and microSDHC Card must be used with the adaptor that comes with the card.

Suitable SD cards

• When using SD cards 4 GB or larger, only SD cards that display the SDHC logo can be used.
• Useable memory is slightly less than the card capacity.
• Please confirm the latest information on the following website.
  http://panasonic.co.jp/pavc/global/cs
  (This site is in English only.)

• If the SD card is formatted on other equipment, the time necessary for recording may be longer. Also, if the SD card is formatted on a PC, you may not be able to use it on this unit. In these cases, format the card on this unit (➡ 81, 114).
• This unit is compatible with SD Memory Cards that meet SD Card Specifications FAT12 and FAT16 formats, as well as SDHC Memory Cards in FAT32 format.
• SDHC Memory Cards used for recording with this unit can only be used with other SDHC Memory Card-compatible equipment. SDHC Memory Cards cannot be used with equipment that is only compatible with SD Memory Cards.
• We recommend using a Panasonic SD card.
• Keep the SD Card out of reach of children to prevent swallowing.

■ Setting the protection
Switch the write-protect switch to the "LOCK" position.

Control reference guide

Remote control

Instructions for operations are generally described using the remote control.
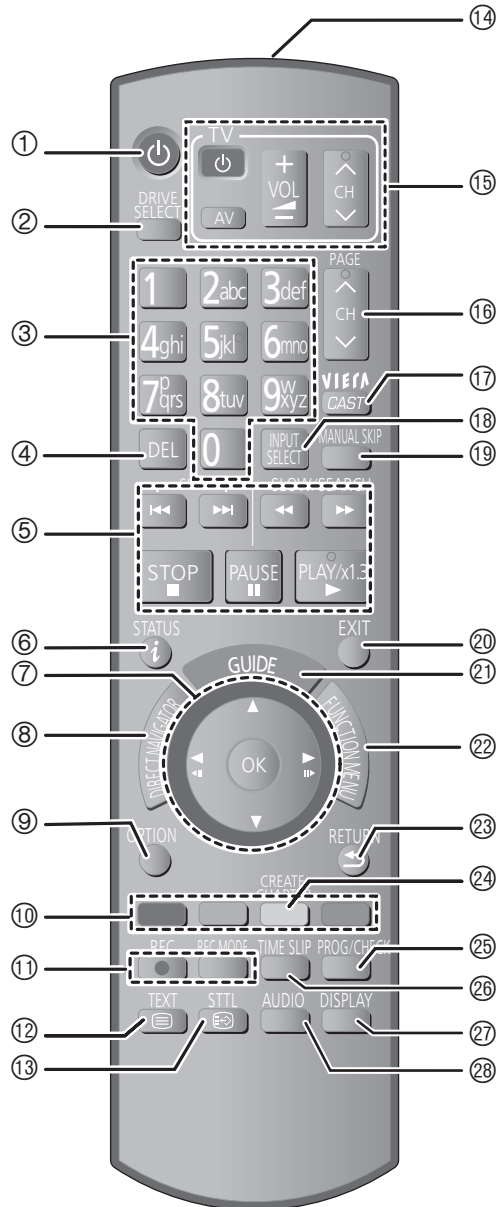
① Turn the unit on or off (➡ 18)
② Select drive (HDD, DVD or SD) (➡ 21, 22, 58)
   Drive changes each time you press [DRIVE SELECT].
③ Select channels and title numbers, etc./Enter numbers or characters (The character buttons may be used when operating VIERA CAST contents.)
④ To delete unwanted recorded titles, timer programmes, still pictures or music (➡ 24, 34, 64, 71)
⑤ Basic operations for recording and play
⑥ Show digital channel information (➡ 20)/Programme information within TV Guide screen (➡ 35)/Show status messages (➡ 78)
⑦ Selection/OK, Frame-by-frame (➡ 13, 36)
⑧ Show DIRECT NAVIGATOR (➡ 21, 58, 66)/Top menu (➡ 21)
⑨ Show OPTION menu (➡ 42, 60, 68)
   This menu is used when playing or editing titles and still pictures, etc.
⑩ Colour buttons
   Use in accordance with instruction on the screen.
⑪ Recording functions
   • [● REC] Start recording (➡ 22)
   • [REC MODE] Change recording mode (➡ 53)
⑫ Show teletext (➡ 20)
⑬ Show subtitles (Subtitles can be viewed if the digital broadcast programme has subtitles.) (➡ 19, 37)
⑭ Transmit the remote control signal
⑮ Television operations (➡ 91)
⑯ Channel select/Change pages in the TV Guide system (➡ 19, 35)
⑰ Show VIERA CAST (➡ 73)
⑱ Input select (TV, AV1, AV2, or DV) (➡ 19, 22, 53, 54)
⑲ Skip approx. 1 minute forward (➡ 37)
⑳ Exit the menu screen
㉑ Show the TV Guide screen (➡ 19, 32, 35)
㉒ Show FUNCTION MENU window (➡ 13)
   By using the FUNCTION MENU you may access the main functions (Playback, Recording, etc.) quickly and easily.
㉓ Return to previous screen
㉔ Create chapter (➡ 45)
㉕ Show Timer Recording screen (➡ 23)
㉖ Skip the specified time (➡ 37)
㉗ Show on-screen menu (➡ 76)
㉘ Select audio (➡ 19, 37)

The unit's display
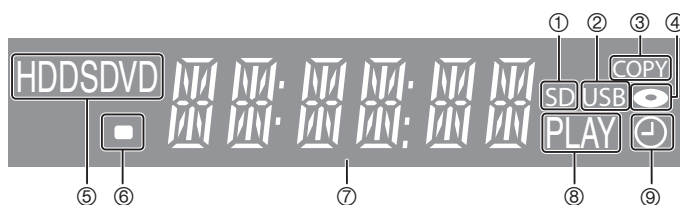
① SD card slot indicator
   This indicator lights up when an SD card is inserted.
② USB port indicator
   This indicator lights up when a USB memory is inserted.
③ Copying indicator
④ Disc indicator
   This indicator lights up when a disc is inserted.
⑤ Drive (HDD, DVD or SD) indicator
   Select "DVD" for any discs. DVD indicator will light up.
⑥ Remote control signal indicator
   This flashes when it is operated by the remote control.
⑦ Main display section indicator
   Current time/playback counter, various messages.
⑧ Playback indicator
⑨ Timer recording indicator
   This indicator lights up when the timer recording standby is activated.

Main unit

Pull to flip down the front panel.
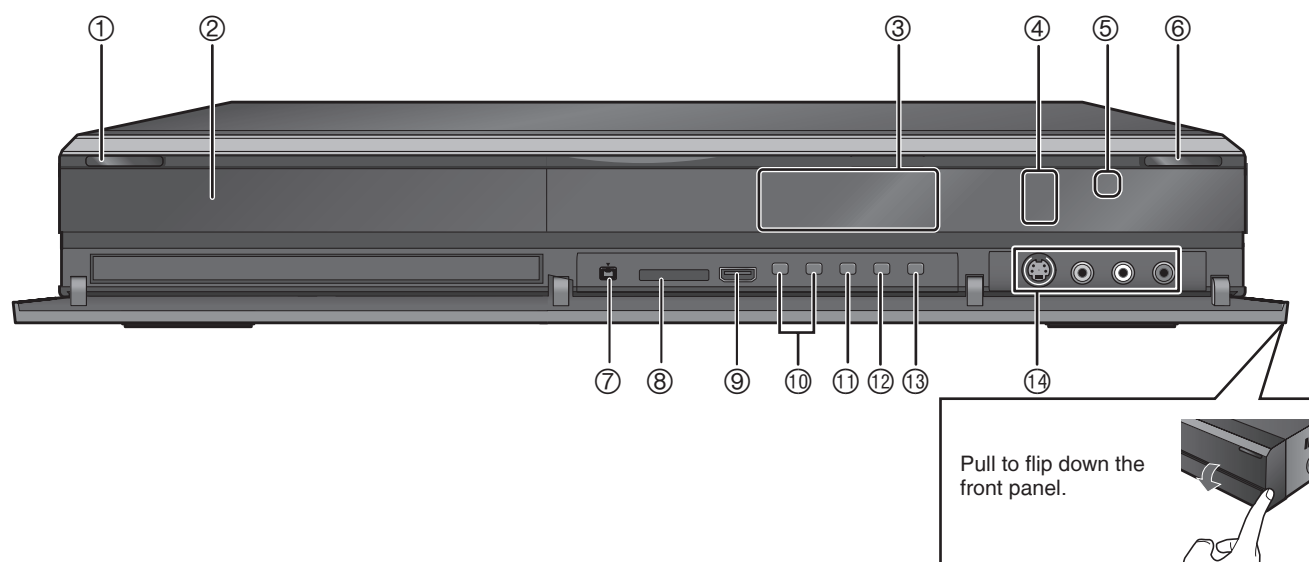
① **Standby/on switch (⏻/l) (➡ 18)**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
② Disc tray (➡ 15)
③ Display (➡ 12)
④ Recording indicator
⑤ Remote control signal sensor
⑥ Open/close disc tray (➡ 15)
⑦ Connection for digital video (DV) camcorder (➡ 54)
⑧ SD card slot (➡ 15)

⑨ USB port (➡ 15)
⑩ Channel select (➡ 19)
⑪ Start recording/Specify a time to stop recording (➡ 22)
⑫ Stop (➡ 22, 36)
⑬ Start play
⑭ Connection for VCR, Panasonic's video camera, etc. (➡ 53, 54)

Rear panel terminals (➡ 16, 17, 95–98)

Easy access to various functions—FUNCTION MENU Display

You can access the main function quickly and easily.

Press [FUNCTION MENU].

Select a function. → Press [OK].

e.g., **HDD**

DIGA FUNCTION MENU
HDD
Time Remaining 30:00 DR

① Playback
② Recording
③ Delete
④ Copy
⑤ TV Guide
⑥ Others
OK
RETURN
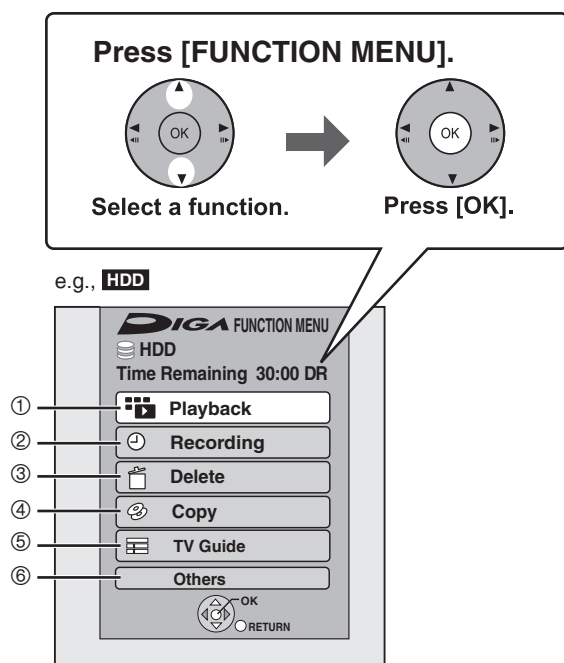
① Playback	The DIRECT NAVIGATOR screen or menu screen etc. for the selected drive or inserted media will be displayed.
② Recording (➡ 23, 34)	You can start programming timer recording or reconfirm and change the timer recording settings.
③ Delete (➡ 24, 64, 71)	The DELETE Navigator screen will be displayed.
④ Copy (➡ 50, 62)	The Copy screen appears.
⑤ TV Guide (➡ 19, 32)	You can easily find programmes you want to watch and set them for timer recording.
⑥ Others Flexible Recording via AV input (➡ 55) Playlists (➡ 39) DV Automatic Recording (➡ 54) Recording via AV2 input (➡ 55) Copy New Pictures (➡ 62) Copy Video (AVCHD) (➡ 56) Network (➡ 73) USB device (➡ 40, 56, 57, 58, 62, 65, 70) DVD Management (➡ 80) Card Management (➡ 80) Setup (➡ 83)	Select and execute a function other than those above, such as recording or setting.

HDD (Hard disk drive) handling care

The HDD is a high precision recording instrument and because of its long recording capability and high speed operation it is a very special device that is easily susceptible to damage.
As a basic rule, save important content to a disc as backup.

■ The HDD is a device that is not built to withstand vibration/shock or dust

Depending on the setup environment and handling of the HDD some content may become damaged and play and recording may no longer be possible. Especially during operation, do not subject the unit to any vibration, shock, or remove the AC mains lead from the household mains socket. In the event of a power failure during recording or play, the content may be damaged.

■ The HDD is a temporary storage device

The HDD is not an everlasting storage device for recorded content. Use the HDD as a temporary storage place for one-off viewing, editing, or copying. It is recommended to save the recorded content on a disc or to keep the original data or CDs that they were copied from.

■ Immediately save (backup) all content as soon as you feel there may be a problem with the HDD

If there is an irregularity within the HDD, repetitive strange sounds or problems with picture (block noise, etc.) may result. Using the HDD in this condition may worsen the problem and in the worst case the HDD may no longer be usable. As soon as you notice this type of problem, copy all content to disc and request service. Recorded content (data) on a HDD that has become unusable is unrecoverable.

• When the unit is turned on or off, there may be an unexpected sound. This does not indicate a problem with this unit.

■ Setup precautions
• **Do not place in an enclosed area where the rear cooling fan and the cooling vents on the side are covered up.**
• **Place the unit on a surface that is flat and not subject to vibration or impact.**
• **Do not place on anything that generates heat like a video cassette recorder, etc.**
• Do not place in an area often subject to temperature changes.
• Place in an area where condensation does not occur. Condensation is a phenomenon where moisture forms on a cold surface when there is an extreme change in temperature. Condensation may cause internal damage to the unit.

DO NOT

This unit
VCR

• **Conditions where condensation may occur**
– When there is an extreme change in temperature (moving from a very hot location to a very cold location, or vice versa, or when subjected to an air conditioner or when cooled air directly impacts the unit). When the HDD (warms during operation) is subjected to cold air, condensation may form on the inside of the HDD and may cause damage to the HDD heads, etc.
– When there is high humidity or a lot of steam in the room.
– During the rainy season.
In the above situation, **without turning the unit on**, let the unit adjust to the room temperature and wait 2–3 hours until condensation is gone.

■ Cigarette smoke etc. causes malfunction or breakdown
The unit may breakdown if cigarette smoke or bug spray/vapor, etc. gets inside the unit.

■ While operating
• Do not move the unit or subject to vibration or impact. (The HDD may become damaged.)
• Do not remove the AC mains lead from the household mains socket, or flip the power breaker switch.
While the unit is on, the HDD is rotating at high speed. Sound or movement due to rotation is normal.

■ When moving the unit
① Turn the unit off. (Wait until "BYE" disappears from the display.)
② Remove the AC mains lead from the household mains socket.
③ Move only after the unit has come to a complete stop (approx. 2 minutes) in order to avoid subjecting to vibration and shock. (Even after turning the unit off, the HDD continues operating for a short time.)

■ Indemnity concerning recorded content
Panasonic does not accept any responsibility for damages directly or indirectly due to any type of problems that result in loss of recording or edited content (data), and does not guarantee any content if recording or editing does not work properly. Likewise, the above also applies in a case where any type of repair is made to the unit (including any other non-HDD related component).

Unit care

The precision parts in this unit are readily affected by the environment, especially temperature, humidity, and dust. Cigarette smoke also can cause malfunction or breakdown.

To clean this unit, wipe with a soft, dry cloth.
• Never use alcohol, paint thinner or benzine to clean this unit.
• Before using chemically treated cloth, carefully read the instructions that came with the cloth.
Observe the following points to ensure continued listening and viewing pleasure.
Dust and dirt may adhere to the unit's lens over time, making it impossible to record or play discs.
Use the Lens cleaner (not included) about once every year, depending on frequency of use and the operating environment. Carefully read the lens cleaner's instructions before use.

Lens cleaner: RP-CL720E
• This lens cleaner may not be for sale depending on the region.

Do not place the unit on amplifiers or equipment that may become hot.
The heat can damage the unit.

DO NOT
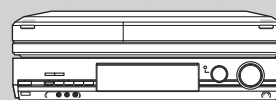
Note
Do not obstruct the rear panel's internal cooling fan.

Before moving the unit, ensure the disc tray is empty.
Failure to do so will risk severely damaging the disc and the unit.

Media handling (Disc/USB memory/SD card)

Inserting discs

① **Press [▲ OPEN/CLOSE] to open the tray.**

Insert label-up.

Cartridge disc
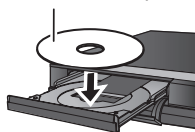
Insert label-up with the arrow facing in.
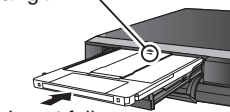
Insert fully.

② **Press [▲ OPEN/CLOSE] to close the tray.**

Automatic drive select function
- If the unit is recording to the HDD or stopped, it automatically switches to the DVD drive when a disc is inserted.
- If you eject a disc and close the disc tray, the HDD drive is automatically selected.

Note
- Remove the 8 cm disc from the cartridge and place it on the tray. Refer to the instructions on how to remove the disc from the cartridge.
- **RAM** It is not possible to record or play continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.

Inserting, removing the USB memory

Inserting the USB memory
When the USB indicator ("USB") on the unit's display is flashing, the USB memory is being read from. Do not turn off the unit or remove the USB memory. Such action may result in malfunction or loss of the USB memory's contents.

- Before inserting any USB memory to this unit, ensure that the data stored therein has been backed up.
- Check the orientation of the USB connector and insert it straight in.
- Insert a USB device while the unit is stopped, so the "USB device" screen is displayed. Select an item and press [OK] to switch to the USB-related operations (➡ 40, 56, 57, 58, 62, 65, 70).
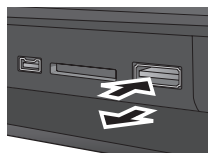
Removing the USB memory
- Complete all USB-related operations and pull the USB memory straight out.
- If a USB memory being accessed is pulled out, then the data may be damaged.

Inserting, removing the SD card

When the card indicator ("SD") on the unit's display is flashing, the card is being read from or written to. Do not turn off the unit or remove the card. Such action may result in malfunction or loss of the card's contents.
- **Inserting foreign objects can cause a malfunction.**

Inserting the card

Press on the centre of the card until it clicks into place.

If you are using a miniSD card or a microSD card, insert it into the adaptor that comes with the card.
Insert and remove this adaptor from the unit.
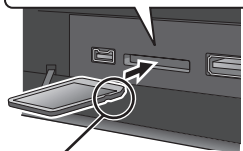
e.g., miniSD

Insert the card label up with the cut-off corner on the right.

Removing the card
① Press on the centre of the card.
② Pull it straight out.

Automatic drive select function
- If you insert an SD card while the unit is stopped, the "SD Card" screen is displayed. Select an item and press [OK] to switch to the SD drive (➡ 39, 56, 57, 58, 62).
- If you remove an SD card, the HDD drive is automatically selected.

Disc and card care

■ How to hold a disc or card
Do not touch the recorded surface or the terminal surface.

DO   *DO NOT*

■ If there is dirt or condensation on the disc
Wipe with a damp cloth and then wipe dry.

DO   *DO NOT*

■ Handling precautions
- Do not attach labels or stickers to discs. (This may cause disc warping and unbalanced rotation, rendering it unusable.)
- Write on the label side of the disc only with a soft, oil-based felt pen. Do not use ballpoint pens or other hard writing implements.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not expose the terminals of the card to water, garbage or other strange things.
- Do not drop stack, or impact discs. Do not place objects on them.
- Do not use the following discs:
  - Discs with exposed adhesive from removed stickers or labels (rental discs, etc.).
  - Discs that are badly warped or cracked.
  - Irregularly shaped discs, such as heart shapes.
- Do not place in the following areas:
  - In direct sunlight.
  - In very dusty or humid areas.
  - Near a heater.
  - Locations susceptible to significant difference in temperature (condensation can occur).
  - Where static electricity or electromagnetic waves occur.
- To protect discs from scratches and dirt, return them to their cases when you are not using them.

DO NOT
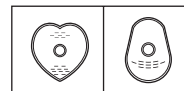
STEP 1 Connection

- Before connection, turn off all equipment and read the appropriate operating instructions.
- **Refer to "Additional connections" (➡ 95) for connection using other terminals and connection with other equipment.**

When the unit is not to be used for a long time
To save power, unplug it from the household mains socket. This unit consumes a small amount of power, even when it is turned off.
[approx. 0.7 W ("Power Save" is set to "On")]

Connecting a television

To the aerial

Television's rear panel

VHF/UHF
RF IN

AUDIO IN   VIDEO IN
R   L

To household mains socket
(AC 220 to 240 V, 50 Hz)

Aerial cable

RF coaxial cable
(included)

AC mains lead
(included)
Connect only after all other connections are complete.

④   ②   ①

③

Other connections
(➡ 17, 95)

Audio/video cable
(included)

Cooling fan

COMPONENT VIDEO OUT   PR   PB   DIGITAL AUDIO OUT PCM/BITSTREAM   COAXIAL

OUT

AV1 IN

R-AUDIO-L   VIDEO   S VIDEO   OPTICAL

LAN
10BASE-T/
100BASE-TX

HDMI
AV OUT

RF OUT   RF IN

AC IN ~

This unit's rear panel

You can enjoy high-quality picture by changing the connection between this unit and your TV.

Connecting to a TV with an HDMI (High Definition Multimedia Interface) cable

When connected to an HDMI compatible unit, an uncompressed digital audio and video signal is transmitted. You can enjoy high quality, digital video and audio with just one cord. When connecting to an HDMI-compatible HDTV (High Definition Television), the output can be switched to 1080p, 1080i or 720p HD video.
- This unit incorporates HDMI™ (V.1.3a with Deep Colour, x.v.Colour™) technology (➡ 114, 115).
- Video sources converted to 1920 × 1080 resolution, while of high quality, will exhibit somewhat lower subjective image resolution than true, native 1080p full-HD sources. See dealer for details.
- Please use High Speed HDMI Cables that have the HDMI logo (as shown on the cover).
- When outputting 1080p signal, please use HDMI Cables 5.0 meters or less.

Regarding VIERA Link "HDAVI Control™" function
When connecting with a Panasonic TV (VIERA) or a receiver equipped with the "HDAVI Control" function, linked operations would be possible. [➡ 74, Linked operations with the TV (VIERA Link "HDAVI Control™")]
- **Non-HDMI-compliant cables cannot be utilised.**
- **It is recommended that you use Panasonic's HDMI cable.**
  Recommended part number:
  RP-CDHG10 (1.0 m), RP-CDHG15 (1.5 m), RP-CDHG20 (2.0 m), RP-CDHG30 (3.0 m), RP-CDHG50 (5.0 m), etc.

Television's rear panel

HDMI IN

HDMI cable

Required setting
- Set "HDMI Video Mode" and "HDMI Audio Output" to "On" (➡ 89).
  (The default setting is "On".)

HDMI AV OUT

This unit's rear panel

Note
- If you are connecting to a TV that is only compatible with 2 channel audio output, audio with 3 channels or more will be down mixed (➡ 114) and output as 2 channels, even if connecting with an HDMI cable. (Some discs cannot be down mixed.)
- You cannot connect this unit to DVI devices that are incompatible with HDCP.
  For units compatible with HDCP (High-Bandwidth Digital Content Protection) copyright protection that are equipped with a digital DVI input terminal (PC monitors, etc.):
  Depending on the unit, images may not display properly or at all when connecting with a DVI/HDMI switching cable. (Audio cannot be output.)

2

3, 4

RETURN ⤺

1 Turn on the television and select the appropriate AV input to suit the connections to this unit.

2 Press [⏻] to turn the unit on.

When the Download from TV screen appears (➡ right)

Auto Tuning setting screen appears.
• **Auto Tuning starts.**
The unit will search for the terrestrial digital channels. TV channels will be located and stored ready for use.
This takes 3 minutes.

Auto Tuning-Digital (DVB)			
Scan	21		69
This will take about 3 minutes.			
CH	Channel Name	Type	Quality
1	TV ONE	DVB	10
2	TV 2	DVB	10
Free TV: 2 Pay TV: 0 Radio: 0 Data: 0			
Searching			
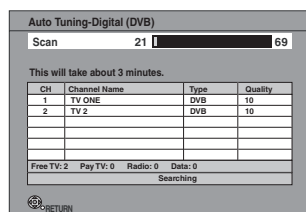
Auto Tuning is complete when Power Save setting screen appears.
The time information can be obtained.

3 Press [▲, ▼] to select "On" or "Off" and press [OK].

Power Save
On
Off
On: Minimises standby power consumption, disables Quick Start function. Unit's Display is set to "Automatic". Off: Enables Quick Start function.
OK RETURN
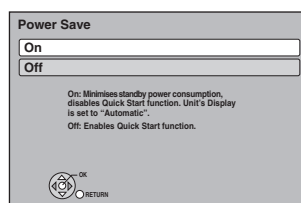
• **On:**
It will go into the Power Save mode when the power is turned off.
• **Off:**
It is possible to start quickly from standby mode.

The features of the power save function when the unit is in standby mode are as follows.

Power Save	On[1]	Off[2]
Power consumption	Approx. 0.7 W	Approx. 10 W
Start up time	Not Quick	Quick[3]

[1] "Unit's Display" is fixed to "Automatic" in the Setup menu. (➡ 88)
[2] "Unit's Display" is changed to "Bright" in the Setup menu.
[3] It is possible to startup and start recording within several seconds.
  – Depending on the type of TV or the connected terminal, it may take time to display the screen.

After Power Save setting is complete, TV Aspect setting screen appears.

4 Press [▲, ▼] to select the TV Aspect and press [OK].
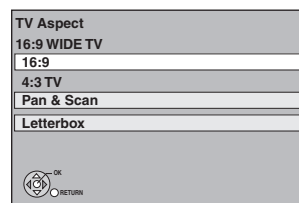
TV Aspect
16:9 WIDE TV
16:9
4:3 TV
Pan & Scan
Letterbox
OK RETURN

• **16:9:**
When connected to a 16:9 widescreen television
• **Pan&Scan:**
When connected to a 4:3 aspect television, side picture is trimmed for 16:9 picture. The "Pan&Scan" setting may not work and the pictures may be shown in the letterbox style depending on the content.
• **Letterbox:**
When connected to a 4:3 aspect television, 16:9 picture is shown in the letterbox style (➡ 114).

When television picture appears, set up is complete.

To stop partway
Press [RETURN ⤺].

■ **To confirm that stations have been tuned correctly (➡ 83, DVB Channel List)**

■ **To restart set up (➡ 84, Auto Tuning)**

■ **Download from TV**
If this unit is connected to a Panasonic TV (VIERA) supporting HDAVI Control 3 or later via an HDMI cable, then the setting information on the TV is acquired by this unit when the unit is turned on for the first time. Please proceed to the following steps.

Download from TV
▷   ▷   ▷
Download in progress. Please wait.
RETURN : to cancel
RETURN
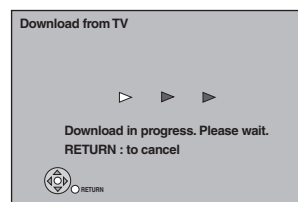
After Download from TV is complete, Power Save setting screen appears.

Press [▲, ▼] to select "On" or "Off" and press [OK].

Power Save
On
Off
On: Minimises standby power consumption, disables Quick Start function. Unit's Display is set to "Automatic". Off: Enables Quick Start function.
OK RETURN

When television picture appears, set up is complete.

To stop partway
Press [RETURN ⤺].

Note
• Acquisition of the setting information is not supported by all Panasonic TVs (VIERA).
• The acquisition may take some time depending on the VIERA setting information.

Watching digital broadcasts

Numbered buttons
∧ ∨ CH
INPUT SELECT
STATUS ⓘ
EXIT
GUIDE
▲, ▼, ◄, ►
OK
OPTION
RETURN ⤴
Colour buttons
STTL ⯌
TEXT ☰
AUDIO

This unit has the tuner which allows it to directly receive and record digital terrestrial channels.

Important
This unit does not have an analogue broadcast tuner.

Select the channel

1 **Turn on the television and select the appropriate AV input to suit the connections to this unit.**

2 **Press [⏻] to turn the unit on.**

3 **Press [INPUT SELECT] a few times and select "TV".**

Input Selection
AV1
AV2
DV
TV

Change ◄◙► Select / RETURN

• It will switch when the display disappears.
(It will switch faster by pressing [OK].)

4 **Press [∧ ∨ CH] to select the channel.**
Everytime you change the station, digital channel information appears automatically.
The length of time the digital channel information is displayed can be changed. (➡ 88, On-Screen Messages)

unit's display;

• You can also select the channel with the numbered buttons.
e.g., 5: [0] ➡ [0] ➡ [5]
    15: [0] ➡ [1] ➡ [5]
   115: [1] ➡ [1] ➡ [5]

Note
• This unit may be able to receive free cable television but it cannot receive paid services.

■ **Select the programme to view using the TV Guide**

1 **Press [GUIDE].**

Operations in the TV Guide system (➡ 35)

2 **Press [▲, ▼, ◄, ►] to select the programme to view and press [OK].**

News
View
Timer Rec Set
Timer Rec Edit
Timer Rec Cancel

• This is displayed only when the programme currently broadcasting is selected.

3 **Press [▲, ▼] to select "View" and press [OK].**

To return to the previous screen
Press [RETURN ⤴].

To exit the screen
Press [EXIT].

Switching audio of the TV broadcast

Press [AUDIO].
• Audio will switch according to the contents of the programme every time it is pressed.

e.g.,

You can also switch audio with the following steps.
① Press [OPTION].
② Press [▲, ▼] to select "Audio Selection" and press [OK].
③ Press [◄, ►] to select audio.

Note
You can not change the audio channel (LR) in following cases.
• When "Rec for High Speed Copy" is set to "On" (➡ 85)
• When the recording mode is XP and "Audio Mode for XP Recording" is set to "LPCM" (➡ 87)

To show subtitle

When "⯌" appears in digital channel information (➡ 20)

Press [STTL ⯌].
• Press again to hide the subtitle.

To select subtitle language

1 Press [OPTION].

FUNCTION MENU
Aspect
Play Menu
Audio Selection
Subtitle Language
Drive Select
OK
RETURN

2 Press [▲, ▼] to select "Subtitle Language" and press [OK].

3 Press [◄, ►] to select language for the subtitle.

- This is not selectable if there are no subtitles or there is only 1 subtitle.
- Press [EXIT] to exit.

To show Teletext

You can enjoy teletext broadcasting, including news, weather forecasts and subtitles, if this service is provided by the broadcasters.

When "🗐" appears in digital channel information (➡ right)

1 Press [TEXT 🗐].

Sub page number
e.g.,
<<01 02 03 04 05 06 07   >>
Current page number — P100

TELETEXT
INFORMATION
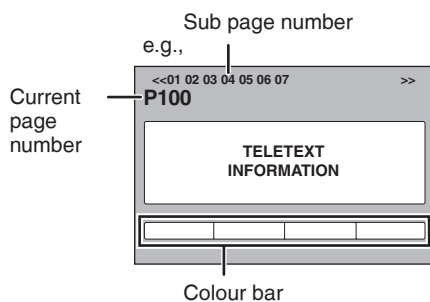
Colour bar

2 Press [▲, ▼], the numbered buttons, or the colour buttons to select the page.

Follow the instruction on the screen to select the page.

To show the sub page
(only when there are sub pages)
Press [◄, ►].

■ **Change the Teletext mode**
"Teletext" in the Setup menu can be changed to following modes. (➡ 88)
- **TOP mode** (only when here is TOP text)
TOP is a particular improvement of the standard teletext service that results in an easier search and effective guide.
  –Fast overview of the teletext information available
  –Easy to use step-by-step selection of the topical subject
  –Page status information at the bottom of the screen
- **List mode**
Four differently coloured page numbers are situated at the bottom of the screen. Each of these numbers can be altered and stored in this unit.

To store frequently viewed page (List mode only)
During the page is displayed
① Press the colour button of the colour to store.
② Press and hold [OK].
e.g.,

P100

Broadcast

| 101 | 200 | 400 | 888 |
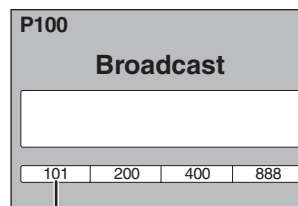
The number changes to white.

To change stored pages (List mode only)
① Press the colour button of the colour to change.
② Enter the new page number with the numbered buttons.
③ Press and hold [OK].

To exit the teletext screen
Press [TEXT 🗐].

Note
The teletext function depends on respective stations.

Digital channel information

While stopped

Press [STATUS ⓘ].

❶   ❷   ❸
1 TV ONE   10:30 All DVB Channels
Coronation street   Select Favourites ▭ — ❹
9:00 - 11:00   ◄ Now ►   Software update ▭ — ❺
Rating:PG   🖙   🗐   I/II
❻   ❼   ❽   ❾
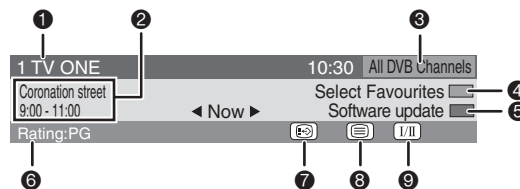
❶ Channel and Station Name
❷ Programme name and Broadcast time
❸ Current favourite list
❹ Change the favourite list
❺ Software update (➡ 94)
❻ The parental ratings level
❼ Subtitle (➡ 19, left)
❽ Teletext (➡ left)
❾ Multiple audio

To switch information of the current programme and the next programme
Press [◄, ►].

To show detailed information about the programme
Press [STATUS ⓘ] again.

To hide the information screen
Press [STATUS ⓘ] once or twice.

Note
You can also select the other channel when the information screen is displayed by pressing [▲, ▼] and [OK].

■ **If new channel message appears**
(➡ 84, New Channel Message)

Refer to "Advanced playback" (➡ 36) for detailed information.
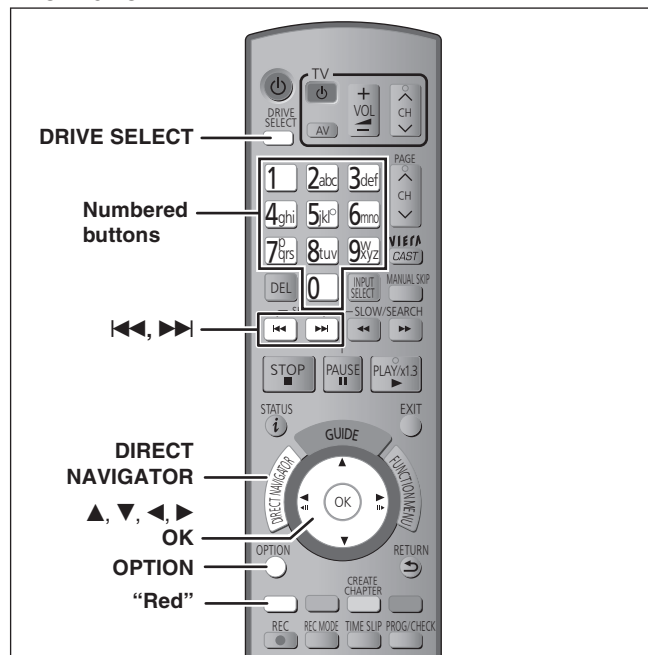
DRIVE SELECT

Numbered buttons

|◄◄, ►►|

DIRECT NAVIGATOR

▲, ▼, ◄, ►

OK

OPTION

"Red"

Preparation
- Turn on the television and select the appropriate video input to suit the connections to this unit.
- Turn on this unit.

Playing DVD-Video

1 **Press [▲ OPEN/CLOSE] on the main unit to open the tray and insert a disc.**
- Press the button again to close the tray.
- Play starts from the point specified by the disc.

2 **When a menu screen appears on the television**
Press [▲, ▼, ◄, ►] to select the item and press [OK].
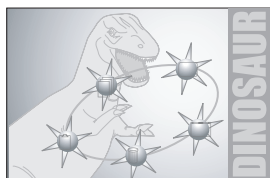
- Some items can also be selected using the numbered buttons.
- If you are instructed to press the "ENTER" button by the menu screen or the disc's instruction document, press [OK].

To display Top Menu
1 Press [OPTION].
2 Press [▲, ▼] to select "Top Menu" and press [OK].
- You can also press [DIRECT NAVIGATOR] to return to the menu screen.

Playing recorded video contents

`HDD` `RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` `-RW(VR)`
You can quickly find the recorded titles and easily play them. You can also sort the titles or edit the Groups of titles. (➡ 38)

The following screen is displayed when recordable disc is inserted.

e.g.,

> **DVD-RAM**
>
> Play
> Copy
>
> DVD-RAM is inserted.
>
> OK
> RETURN
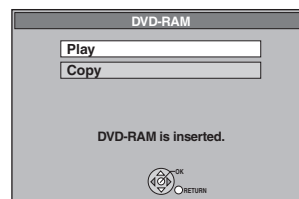
Press [▲, ▼] to select "Play" and press [OK].
It will go to step 3 (➡ below).

1 **Press [DRIVE SELECT] to select the HDD or DVD drive.**

The HDD or DVD indicator lights up on the unit's display.

2 **Press [DIRECT NAVIGATOR].**

`HDD` `RAM` When "VIDEO" is not selected, press the "Red" button to select "VIDEO".

DIRECT NAVIGATOR **Grouped Titles**
HDD   Time Remaining 30:54 DR VIDEO PICTURE MUSIC

	Date	Channel	Time	Title Name	Titles
	25.05		12:36	Born And Bred: A Wrathful	2
	01.01	TV ONE	1:35		1
	01.01	TV2	1:13		1

Rec time
1:00(DR)

Not viewed

Page 01/01

OK   OPTION Select
RETURN VIDEO   PICTURE   MUSIC . Play
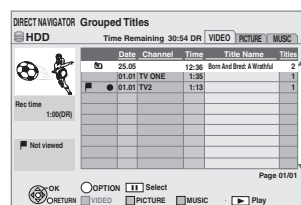
3 **Press [▲, ▼] to select the title and press [OK].**

To show other pages
Press [|◄◄, ►►|].

Regarding DIRECT NAVIGATOR (➡ 38)

To exit the screen
Press [DIRECT NAVIGATOR].

Basic operations

Refer to "Important notes for recording" (➡ 26) and "Advanced recording" (➡ 28) for detailed information.

DRIVE SELECT

Numbered buttons

∧ ∨ CH

INPUT SELECT

◀, ▶, OK

■

⏸

● REC
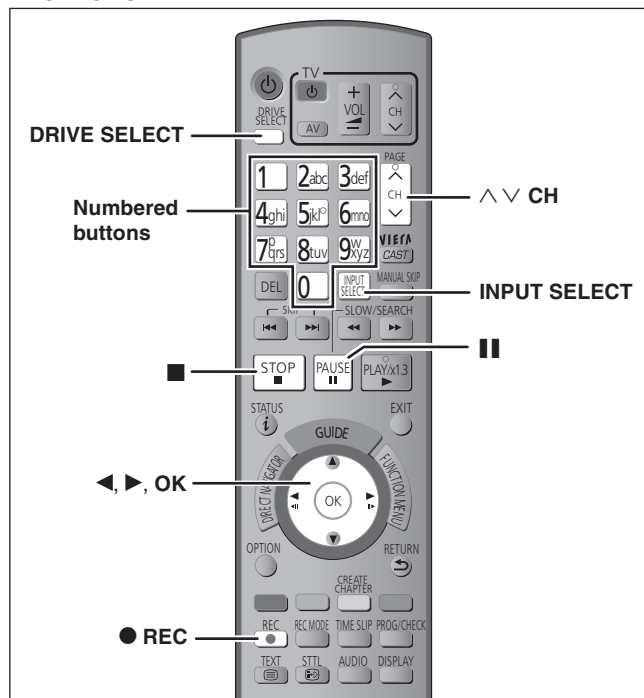
This operation will only record to HDD in DR mode.

Preparation
- Turn on the television and select the appropriate video input to suit the connections to this unit.
- Turn on this unit.

1 Press [DRIVE SELECT] to select the HDD drive.

The HDD indicator lights up on the unit's display.

2 Press [INPUT SELECT] a few times and select "TV".

3 Press [∧ ∨ CH] to select the channel.

To select with the numbered buttons:
e.g., 5:   [0] ➡ [0] ➡ [5]
     15:   [0] ➡ [1] ➡ [5]
    115: [1] ➡ [1] ➡ [5]

4 Press [● REC] to start recording.

unit's display;

REC1   "REC1" or "REC2" will light.

Recording will take place on open space on the HDD. Data will not be overwritten.
- When [● REC] is pressed while a drive other than the HDD is selected, it will automatically switch to HDD and start the recording.

5 To stop recording
Press [■].
If the following screen appears

Stop Recording

Recording [TV ONE 001]

Recording of the above channel is in progress.
To stop recording, select "Yes" or press STOP.
Stop this recording ?

| Yes | No |

OK
RETURN
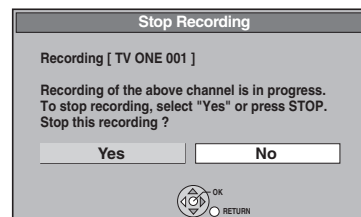
Press [◀, ▶] to select "Yes" and press [OK].

■ To pause recording
Press [⏸].
Press again to restart recording.
You can also press [● REC] to restart.
(Title is not split into separate titles.)

■ To record 2 programmes simultaneously (➡ 29)

When recording digital broadcast with subtitles or multiple audio

All subtitles and multiple audio are recorded. It is possible to switch them after recording.

To specify a time to stop recording— One Touch Recording

During recording
Press [● REC] on the main unit to select the recording time.
- You can specify up to 4 hours later.
- The unit display changes as shown below.

OFF0:30 ⟶ OFF1:00 ⟶ OFF1:30 ⟶ OFF2:00
⌐ Counter (cancel) ⟵ OFF4:00 ⟵ OFF3:00 ⌐

- This does not work during timer recordings (➡ 23, 32) or while using Flexible Recording via AV input (➡ 55).
- The unit turns off automatically after the time to stop recording is reached.

To cancel
Press [● REC] on the main unit several times until the counter appears.
- The time to stop recording is cancelled; however, recording continues.

To stop recording
Press [■].

Refer to "Important notes for recording" (➡ 26) and "Advanced timer recording" (➡ 32) for detailed information.

- EXIT
- ▲, ▼, ◄, ►
- OK
- RETURN ⏎
- "Green"
- "Red"
- PROG/CHECK
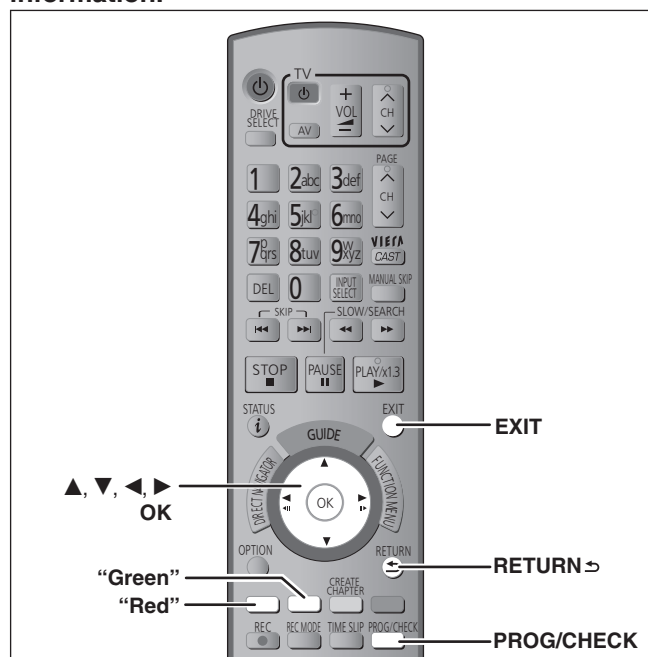
This operation will only record to HDD.

Timer recording of the broadcast
Recording mode:DR

Timer recording from the external equipment connected to AV1 or AV2
Recording mode:XP, SP, LP, EP, FR

Depending on the type of broadcast, there may be restrictions on the title you are trying to record.

• You can enter up to 32 programmes up to a month in advance.
(Each daily or weekly programme is counted as one programme.)

Preparation
• Turn on the television and select the appropriate video input to suit the connections to this unit.
• Turn on this unit.
• Make sure that the clock settings are correct (➡ 90).

1 Press [PROG/CHECK].
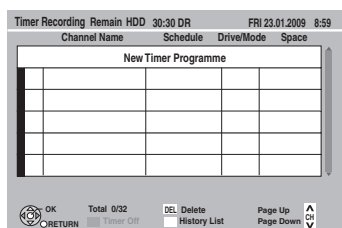
2 Press [▲, ▼] to select "New Timer Programme" and press [OK].

3 Press [◄, ►] to select the items and change the items with [▲, ▼].
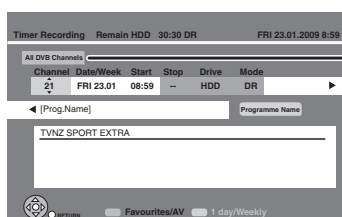
Favourites/AV

• **Channel**
Select the channel to record.
You can press "Red" button (Favourites/AV) to change "AV input", "All DVB Channels", "TV" or "Favourites 1", etc.
You can perform this operation when you select the box of "Channel".

• **Date/Week**
You can select current date up to one month later minus one day. You can select "1day" or "Weekly" by pressing the "Green" button only when "Date/Week" is selected.
Titles recorded using the same daily or weekly timer are bundled and displayed as a "group" in the DIRECT NAVIGATOR screen (➡ 38) except when using Auto Renewal Recording.

• **Start/Stop**
Press and hold [▲, ▼] to alter the Start (Start time) and Stop (Finish time) in 15-minute increments.

• **Drive**
HDD (You cannot change the drive.)

• **Mode**
Recording modes (➡ 28)
"XP", "SP", "LP", "EP", "FR" can be selected when "AV1" or "AV2" is selected in "Channel" column.
It will be fixed to DR mode if anything else is selected.

• **Renew (Auto Renewal Recording) (➡ 33)**

• **Programme Name**
Press [OK]. (➡ 72, Entering text)

4 Press [OK].

The timer programme is stored and the timer icon (red) is displayed.

Timer icon (red)
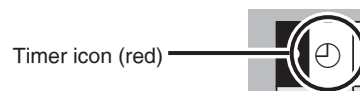
"⏲" lights on the unit's display to indicate timer recording standby has been activated.
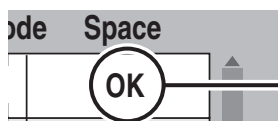
Check for available space on HDD when "!" is displayed.

To return to the previous screen
Press [RETURN ⏎].

To exit the screen
Press [EXIT].

■ **Timer recording Using the TV Guide System (➡ 32)**

■ **To release the unit from recording standby (➡ 33)**

■ **To cancel recording when recording has already begun (➡ 33)**

■ **Notes on timer recording (➡ 34)**

Basic operations

RQT9487

DRIVE SELECT

DEL

I◄◄, ►►I

II

EXIT

FUNCTION MENU

▲, ▼, ◄, ►

OK

"Red"

RETURN ⤺
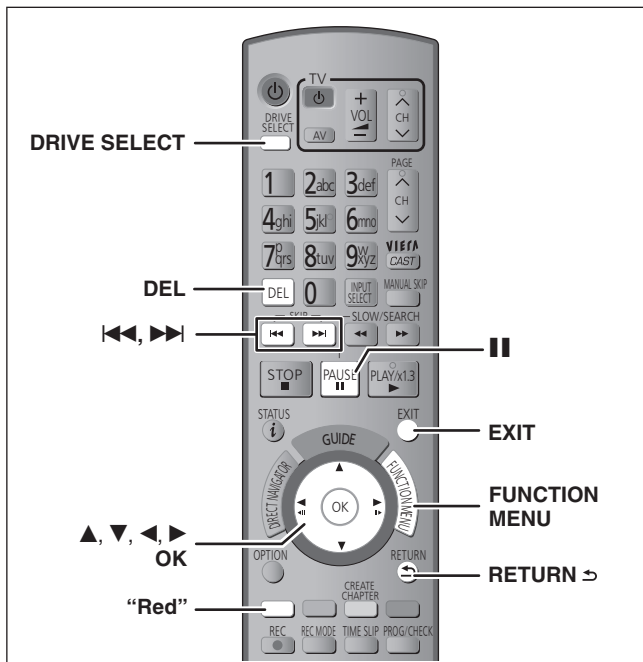
`HDD` `RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW`
(You cannot delete items on finalised discs.)

- **A title cannot be restored once it is deleted.** Make certain before proceeding.
- Title that is currently recording cannot be deleted.
- Titles on the disc cannot be deleted in the following cases:
  – While recording to disc
  – While high speed copying

Preparation
- Press [DRIVE SELECT] to select the HDD or DVD drive.
- `RAM` Release protection (➡ 80, Setting the protection).

■ Available disc space after deleting

- `HDD` `RAM` The space deleted becomes available for recording.

Available disc space increases after deleting any of these titles.

Title	Title	.....	Last title recorded	Available disc space

- `-RW(V)` `+RW` Available recording space increases only when the last recorded title is deleted.

Available disc space does not increase even after deleting.   Available disc space increases after deleting.

Title	Title	.....	Last title recorded	Available disc space

Later recorded titles

Title	Deleted	.....	Last title recorded	Available disc space

This space becomes available for recording after all the later recorded titles are deleted.

- `-R` `-R DL` `+R` `+R DL` Available space does not increase even after the contents are deleted.

Using the DELETE Navigator to delete

1 While stopped
Press [FUNCTION MENU].

2 ### Press [▲, ▼] to select "Delete" and press [OK].
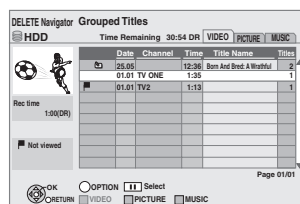
`HDD` `RAM` When "VIDEO" is not selected, press the "Red" button to select "VIDEO".

Switching of the Navigator `HDD` (➡ 38)

You can confirm the titles, that you have selected using the option menu. (➡ 42, step 3)

3 ### Press [▲, ▼] to select the title and press [II].

A check mark is displayed. Repeat this step until you select all items you wish to delete.
- Press [II] again to cancel.

To show other pages
Press [I◄◄, ►►I].

4 ### Press [OK].

5 ### Press [◄, ►] to select "Delete" and press [OK].
The title is deleted.

To return to the previous screen
Press [RETURN ⤺].
To exit the screen
Press [EXIT].

Deleting during play

1 While playing
Press [DEL].

2 ### Press [◄, ►] to select "Delete" and press [OK].
The title is deleted.

Copying titles
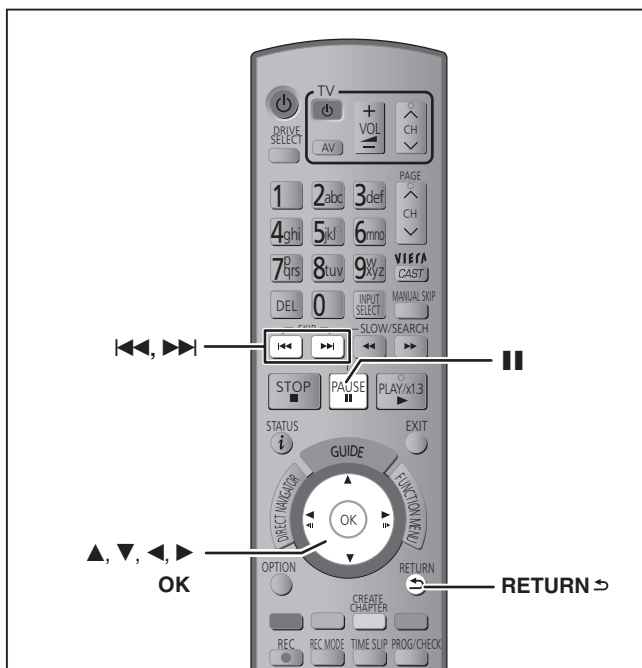
HDD → **RAM** **-R** **-R DL** **-RW(V)** **+R** **+R DL** **+RW**
(You cannot copy to finalised discs.)

1 Insert a disc.
e.g.,

```
              DVD-RAM

    Play
    Copy


         DVD-RAM is inserted.

              OK
              RETURN
```
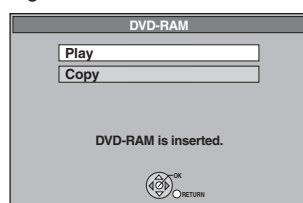
2 Press [▲, ▼] to select "Copy" and press [OK].

3 Set the copy direction.
① Press [▲, ▼] to select "Copy Direction" and press [▶].
② Press [▲, ▼] to select "Source" and press [OK].
③ Press [▲, ▼] to select "HDD" and press [OK].
   If you select "HDD", "Destination" is automatically set to "DVD".
④ Press [▲, ▼] to select "Destination" and press [OK].
⑤ Press [▲, ▼] to select "DVD" and press [OK].
⑥ Press [◄] to confirm.

```
Copy
    Cancel All
                        Source       HDD
1 Copy Direction
  HDD → DVD             Destination   DVD
2 Copy Mode            Information of the copy destination
  VIDEO  High Speed    - DVD-RAM
                       - Copy restricted titles can be
3 Create List            copied on to disc
  0
    Start Copying
    RETURN             Select the copy direction.
```
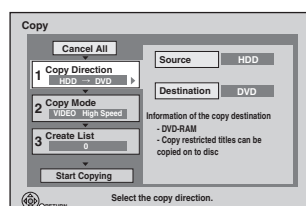
4 Set the recording mode.
① Press [▲, ▼] to select "Copy Mode" and press [▶].
② Press [▲, ▼] to select "Format" and press [OK].
③ Press [▲, ▼] to select "VIDEO" and press [OK].
④ Press [▲, ▼] to select "Recording Mode" and press [OK].
⑤ Press [▲, ▼] to select the mode and press [OK].
⑥ Press [◄] to confirm.

5 Register titles for copy.
① Press [▲, ▼] to select "Create List" and press [▶].

```
Copy
    Cancel All         Destination Capacity:  4343 MB
                                  Size:     0 MB ( 0% )
1 Copy Direction       No.  Size          Title
  HDD → DVD                 New item (Total=0)
2 Copy Mode
  VIDEO  High Speed
3 Create List
  0
    Start Copying            Page 01/01
  OK
  RETURN     OPTION  Create copy list.
```

② Press [▲, ▼] to select "New item" and press [OK].

```
Create List    Grouped Titles
 HDD
                  Date   Channel   Time   Title Name        Title
            25.05            12:36  Born and Bred: A Wrathful  2
            01.01 TV ONE     1:35                             1
            01.01 TV2        1:13                             1
Time    12:36
Rec time
    0:52(SP)
                                              Page 01/01
  OK
  RETURN    OPTION   Select
```

③ Press [▲, ▼] to select the title and press [▮▮].
   A check mark is displayed. Repeat this step until you select all necessary items.
   ● Press [▮▮] again to cancel.
   ● The items will be copied in the order of the copying list. If you want to specify the order, repeat selecting one item at a time.
   ● When copying to a disc using high speed mode, only titles indicated with " " can be registered.
   ● **To show other pages**
     Press [◄◄, ►►|].
④ Press [OK].
   ● **To edit the copying list (➜ 51)**
   You cannot start copying when the value of "Size" (➜ 51) exceeds 100% ("Destination Capacity" is not sufficient).
⑤ Press [◄] to confirm.

6 Set to make it possible to play on other equipment.
("Finalise" or "Create Top Menu")
(**HDD** → **-R** **-R DL** **-RW(V)** **+R** **+R DL** **+RW** only)
① Press [▲, ▼] to select "Other Setting" and press [▶].
② Press [OK].
③ Press [▲, ▼] to select "On" or "Off" and press [OK].
   ● **If "On" is selected**
     – **-R** **-R DL** **-RW(V)** **+R** **+R DL** After finalising, the discs become play-only and you can also play them on other DVD equipment. However, you can no longer record or edit.
     – **+RW** Create the Top Menu. Top Menu is a convenient function. We recommend you create the menu before playing a +RW disc on other equipment.
④ Press [◄] to confirm.

7 Press [▲, ▼] to select "Start Copying" and press [OK].

8 Press [◄, ►] to select "Yes" and press [OK] to start copying.

To stop copying
Press and hold [RETURN ⮌] for 3 seconds.
(You cannot stop while finalising or creating Top Menu.)

To return to the previous screen
Press [RETURN ⮌].

■ **Copying list icons and functions (➜ 51)**

■ **To check the properties of a title and sort Copying list (➜ 51)**

Note
● Titles in the grouped titles and other titles cannot be registered simultaneously.
● Titles recorded using a different encoding system (PAL or NTSC) from the TV system currently selected on the unit cannot be copied.

Recording to HDD	Recording or timer recording is performed in DR mode using this unit's tuner. • Recording or timer recording from external equipment is performed in XP, SP, LP, EP or FR mode.
Recording to discs	`RAM` `-R` `-RW(V)` `+R` `+RW` Recording on the discs is performed either in FR mode using "Recording via AV2 input" or in XP, SP, LP or EP mode using "DV Automatic Recording".
Recording to DVD-R DL and +R DL	**You cannot directly record to a DVD-R DL and +R DL disc on this unit.** Record to the HDD and then copy to the disc.

High definition quality image	Quality of titles to be recorded differs depending on the recording mode. (➡ 28)
	• **When recording in DR mode**
	  Recorded as high definition quality.
	• **When converting recording mode to HG, HX, HE, HL from DR**
	  Recorded as high definition quality with compressed broadcast data.
	• **When copying in XP, SP, LP, EP, FR modes**
	  Recorded as standard definition quality.

Broadcast in multi-channel sound	You can select the audio language when receiving audio in multi-channel broadcast ["I/II" appears at the bottom of digital channel information display (➡ 20)].
	• **When recording in DR mode**
	  All multiple audio are recorded. It is possible to switch audio during the playback of the title.
	• **When converting recording mode to HG, HX, HE, HL from DR/When copying in XP, SP, LP, EP, FR modes**
	  Only one audio is recorded.
	  Before copying
	  – "Copy": Select the audio with "DVB Preferred Language" in the Setup menu (➡ 84).
	  – "Copy Title Playing": Select the audio with "Audio Selection" in the Disc menu (➡ 76).

Programmes with subtitles	It is possible to display the subtitles when receiving a programme with the subtitles ["⊟↔)" appears at the bottom of digital channel information display (➡ 20)].
	• **When recording in DR mode**
	  Subtitles will be recorded as they are. It is possible to switch the subtitles during the playback of the title.
	• **When converting recording mode to HG, HX, HE, HL from DR/When copying in XP, SP, LP, EP, FR modes**
	  Subtitle will not be recorded.

Surround audio	You can enjoy surround audio when receiving a programme with surround audio (➡ 28).
	• **When recording in DR mode**
	  It is recorded as is.
	• **When converting recording mode to HG, HX, HE, HL from DR**
	  It is recorded with surround audio that was converted from broadcasted audio format (➡ 87, Audio Channels for HG/HX/HE/HL Recording).
	• **When copying in XP, SP, LP, EP, FR modes**
	  It is recorded with stereo audio.

16:9 image such as wide broadcasting	• When "Rec for High Speed Copy" the Setup menu is "On"
	  – Record in XP, SP, LP, EP, or FR mode from external equipment.
	  – Copy from the finalised disc (DVD-Video) to the HDD.
	• When copying to `-R` `-R DL` `-RW(V)`
	• When converting the recording mode from DR mode to HG, HX, HE, HL, XP, SP, LP, EP, FR modes
	
	It will be recorded in accordance to the setting of "Aspect for Recording" (➡ 85) in the Setup menu.
	• In the following cases, even when set to "Automatic" or "16:9", recordings will be made or copied in 4:3.
	  – `-R` `-R DL` `-RW(V)` When the recording mode is set to "EP" or "FR (recordings 5 hours or longer)" mode
	  – When recording or copying to a +R and +RW/When copying to a +R DL

DR File Conversion	"DR File Conversion" is a function that converts the titles in DR mode to other recording modes. In general, Data size of a title will be smaller than the original title after conversion. You can save HDD capacity by deleting the original title after conversion. Title DR — Available disc space **Converting to other mode** Title DR — Available disc space Title HL **Deleting the original data** Title HL — Available disc space

High Speed Copy	Speed to copy the title recorded on the HDD to a disc differs depending on the recording mode of the title and the disc to copy.
	The title in DR, HG, HX, HE, HL modes can not be copied at high speed.
	Title in XP, SP, LP, EP, FR modes `RAM` Title can be copied at high speed.
	`-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` Title can be copied at high speed if "Rec for High Speed Copy" was set to "On" before the programme is recorded to HDD. (The default setting is "On". ➡ 85)
	But in the following cases, high speed mode does not work. – `+R` `+R DL` `+RW` Titles recorded in "EP" mode and "FR (recordings 5 hours or longer)" mode – `+R` `+R DL` `+RW` Titles recorded in 16:9 aspect – `-R` `-R DL` `-RW(V)` Titles recorded in 16:9 aspect using "EP" mode or "FR (recordings 5 hours or longer)" mode
Playing the disc on other players	`-R` `-R DL` `-RW(V)` `+R` `+R DL` **The disc must be finalised. (➡ 82)** It is necessary to finalise DVD-R, etc. on this unit after recording or copying titles to them. You can then play them as a commercially sold DVD-Video. However, the discs become play-only and you can no longer record or copy.[※] [※] You can record and copy again if you format DVD-RW. (➡ 81)
	Record to DVD-R, etc. **Play on other DVD equipment** **Finalise**
	`+RW` If the disc failed to play on other equipment, we recommend you create top menu (➡ 82).

Advanced recording

Recording modes

This also explains about while recording and while copying. (There are discs that can only copy, depending on the disc.)
Recording modes that can be selected differ depending on the recording methods and discs.

Recording mode	DR	HG, HX, HE, HL	XP, SP, LP, EP	FR Flexible Recording Mode
Features	Record with the same quality of the broadcast	Record high definition programme as compressed[1] High Definition data	Record in quality as in conventional analogue broadcast	Record in quality as in conventional analogue broadcast Record by automatically adjusting the quality between XP and EP (8 hours) depending on the remaining area on the disc
Quality that can be recorded	Quality same as broadcasted (HD quality and SD quality)	Quality produced by conversion of broadcast data (HD quality and SD quality)	SD quality only	
Multiple audio	Record all multiple audio	Record only one audio (➡ 26)		
Subtitles	Can be recorded	Cannot be recorded		
The audio of the surround programme	Surround audio as the broadcast	Surround audio produced by conversion of broadcast audio format[2] (➡ 87, Audio Channels for HG/HX/HE/HL Recording)	Stereo audio	

[1] MPEG-4 AVC/H.264 encoding
[2] If the audio sampling frequency is not 48 kHz, surround audio is mixed and recorded in front LR channels. Audio will be output from two front speakers only, even if you play it on 5.1 ch speaker connection.

∎ Recording method
(○:Possible, –:Impossible)

Recording method		HDD	RAM	-R / -RW(V)	+R / +RW	-R DL / +R DL
Recording	(DR)	○[1]	–	–	–	–
	(HG, HX, HE, HL)	–	–	–	–	–
	(XP, SP, LP, EP)	○[2]	–	–	–	–
	(FR)	–	–	–	–	–
Timer Recording	(DR)	○[1]	–	–	–	–
	(HG, HX, HE, HL)	–	–	–	–	–
	(XP, SP, LP, EP)	○[2]	–	–	–	–
	(FR)	○[2]	–	–	–	–
Flexible Recording via AV input	(DR)	–	–	–	–	–
	(HG, HX, HE, HL)	–	–	–	–	–
	(XP, SP, LP, EP)	–	–	–	–	–
	(FR)	○	–	–	–	–
Recording via AV2 input	(DR)	–	–	–	–	–
	(HG, HX, HE, HL)	–	–	–	–	–
	(XP, SP, LP, EP)	–	–	–	–	–
	(FR)	–	○	○	○	–
DV Automatic Recording	(DR)	–	–	–	–	–
	(HG, HX, HE, HL)	–	–	–	–	–
	(XP, SP, LP, EP)	○	○	○	○	–
	(FR)	–	–	–	–	–

[1] When using this unit's tuner
[2] When recording from external equipment

∎ Maximum number of titles that can be recorded
HDD
• You can record up to 499 titles on HDD. (When continuously recording for long durations, titles are automatically divided every 8 hours.)
RAM **-R** **-R DL** **-RW(V)**
• You can record up to 99 titles on one disc.
+R **+R DL** **+RW**
• You can record up to 49 titles on one disc.

■ FR (Flexible Recording Mode)

You can set FR (Flexible Recording) mode when copying or recording from external equipment. The unit automatically selects a recording rate between XP and EP (8 hours) that will enable the recordings to fit in the remaining disc space with the best possible recording quality.
For example with a 90 minute recording to an unused DVD-RAM, the picture quality is adjusted to between "XP" and "SP".
● When recording to the HDD, picture quality is automatically adjusted to precisely fit a copied title on a 4.7 GB disc.

■ Recording modes and approximate recording times

Depending on the content being recorded, the recording times may become shorter than indicated.
(The times provided on this chart are an estimate.)

Recording Mode	HDD (250 GB)	DVD-RAM		DVD-R DVD-RW +R +RW (4.7 GB)	DVD-R DL +R DL (8.5 GB)
		Single-sided (4.7 GB)	Double-sided[*2] (9.4 GB)		
DR[*1] (High Definition Quality: 14 Mbps)	37 hours 30 min.	–	–	–	–
DR[*1] (Standard Definition Quality: 5 Mbps)	105 hours	–	–	–	–
HG	40 hours	–	–	–	–
HX	60 hours	–	–	–	–
HE	90 hours	–	–	–	–
HL	120 hours	–	–	–	–
XP	55 hours	1 hour	2 hours	1 hour	1 hour 45 min.
SP	110 hours	2 hours	4 hours	2 hours	3 hours 35 min.
LP	221 hours	4 hours	8 hours	4 hours	7 hours 10 min.
EP[*3]	441 hours (331 hours[*4])	8 hours (6 hours[*4])	16 hours (12 hours[*4])	8 hours (6 hours[*4])	14 hours 20 min. (10 hours 45 min.[*4])

[*1] Recording time of DR mode depends on bit rate of broadcasting.
[*2] It is not possible to record or play continuously from one side of a double sided disc to the other.
[*3] When recording to the HDD in "EP" or "FR (recordings 5 hours or longer)" mode, you cannot perform high-speed copy to +R, +R DL or +RW discs.
[*4] When "Recording time in EP mode" is set to "6 hours" in the Setup menu (➡ 85). The sound quality is better when using "6 hours" than when using "8 hours".
● RAM When recording to DVD-RAM using "8 hours" mode, play may not be possible on DVD players that are compatible with DVD-RAM. Use "6 hours" mode if playback may be on other equipment.

■ Regarding recording time remaining

DR mode recording
Remaining time in the DR mode is calculated with a bit rate of approx. 14 Mbps. But the bit rate differs depending on the broadcast, so the displayed remaining time might be different from the actual remaining time.

Other recording modes (title conversion or from external input)
This unit records using a VBR (Variable bit rate) data compression system to vary recorded data segments to match video data segments which may cause differences in the displayed amount of time and space remaining for recording.

If the remaining amount of time is insufficient, delete any unwanted titles to create enough space before you start recording.

2 programmes simultaneous recording

It is possible to record 2 programmes simultaneously.

Possible combination for 2 programmes simultaneous recording

To record both programmes to the HDD	**HDD** Digital broadcast (DR mode)	and	**HDD** Digital broadcast or external input

Note
● 2 programmes simultaneous recording is not possible in following conditions:
  – 2 programmes from the external input
  – While recording from DV input, or executing "Recording via AV2 input"
  – While high speed copying
  – 2 programmes on same channel cannot be recorded simultaneously by pressing [● REC].

Playing while you are recording

This operation will only record to HDD.

Chasing playback
Playback from the beginning of the title in the HDD, while the title is being recorded to the HDD.

Simultaneous rec and play
Playback the previously recorded title while recording onto the HDD.

1 Press [DRIVE SELECT] to select the HDD or DVD drive.

2 Press [DIRECT NAVIGATOR] during recording.
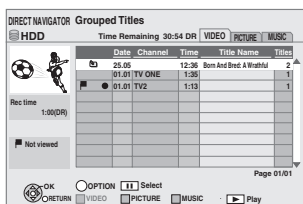
"●" is displayed on the recording programme.

3 Press [▲, ▼] to select a title and press [OK].

To stop play
Press [■].

To exit the DIRECT NAVIGATOR screen
Press [DIRECT NAVIGATOR].

To stop recording
After play stops
1 Press [DIRECT NAVIGATOR] to exit the screen.
2 Press [■].
● If the confirmation screen appears (➡ 22)
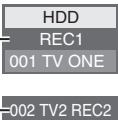
Note

● "Chasing playback" and "Simultaneous rec and play" can only be used with programmes of the same encoding system (PAL/NTSC).
● Depending on the state of the unit, playback may not be possible. (➡ 99)

Operation during Recording

Check the recording programme	**Press [STATUS ⓘ].** e.g., while 2 programmes simultaneous recording Recording programme displayed on the TV screen ⟶ HDD / REC1 / 001 TV ONE Recording programme not displayed on the TV screen ⟶ 002 TV2 REC2
Switch the input	**Press [INPUT SELECT].**
Switch to other channel	**Press [∧ ∨ CH].**
Display the recording programme on the TV screen	It is necessary to display the recording programme onto the TV screen to perform operations such as pause. • If the input was switched: Press [INPUT SELECT]. • If the channel was switched: Press [∧ ∨ CH]. • If the drive was switched: Press [DRIVE SELECT].
To stop recording	It is necessary to display the programme you want to stop on the TV screen. (➡ above) **Press [■].** • From the start to the end of the recording is called one title.

To pause recording	It is necessary to display the programme you want to pause on the TV screen. (➡ above)
	Press [❙❙].
	• Press again to restart recording.
	  You can also press [● REC] to restart.
	  (Title is not split into separate titles.)
	• If paused while recording in DR mode, the paused part may become a still picture for a moment during playback of that programme.

Perform 2 programmes simultaneous recording	**Record other programme with steps 1–4 on page 22.** • One of the 2 programmes needs to be digital broadcasting recorded with DR mode. • "Manual recording" is also available. (➡ 54) **unit's display;** REC1 / REC2 — "REC1" and "REC2" will light. • Channel switch / input switch while performing 2 programmes simultaneous recording will switch between the 2 recording programmes.

Timer recording Using the TV Guide System

This operation will only record to HDD in DR mode.

TV Guide system provides programme information only from the digital broadcasts station displayed on the television like a TV programme magazine.

• You can enter up to 32 programmes up to a month in advance. (Each daily or weekly programme is counted as one programme.)

Preparation
• Turn on the television and select the appropriate video input to suit the connections to this unit.
• Turn on this unit.
• Make sure that the clock settings are correct (➡ 90).

Note
• TV Guide does not work if the clock is not set correctly.
• If "NTSC" has been selected for "TV System" (➡ 88), the TV Guide system cannot be used.
• The receipt of the TV Guide system data is only possible via the aerial input of this unit. The receipt of the TV Guide data via externally connected satellite receivers is not possible.

1 Press [GUIDE].

2 Press [▲, ▼, ◄, ►] to select the future programme and press [OK].

• Following screen is displayed when the programme currently broadcasting is selected.

News
View
Timer Rec Set
Timer Rec Edit
Timer Rec Cancel
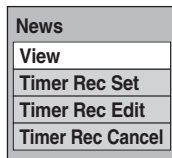
Press [▲, ▼] to select "Timer Rec Set" and press [OK].

• Confirm the programme (start and end time) by using a TV magazine, etc. and make corrections if necessary using [▲, ▼, ◄, ►] (➡ 23, step 3).

3 Press [OK].

The timer programme is stored and the timer icon (red) is displayed.

Timer icon (red)
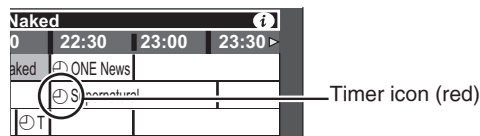
"🕐" lights on the unit's display to indicate timer recording standby has been activated.

To return to the previous screen
Press [RETURN ↰].

To exit the screen
Press [EXIT].

■ To cancel a timer recording on the TV Guide screen
① Press [▲, ▼, ◄, ►] to select the programme in the TV Guide and press [OK].
② Press [◄, ►] to select "Yes" and press [OK]. ("🕐" in the TV Guide disappears.)

■ To modify the timer recording on the TV Guide screen
① Press [▲, ▼, ◄, ►] to select the programme you want to modify in the TV Guide and press [OPTION].

Menu
View
Timer Rec Set
Timer Rec Edit
Timer Rec Cancel
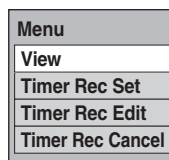
② Press [▲, ▼] to select "Timer Rec Edit" and press [OK]. (➡ 23, step 3)

■ When the TV Guide displays the empty TV Guide list

The "empty" field
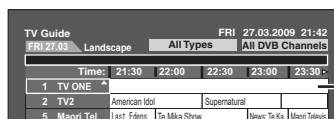
• Some digital broadcast may not send programme information. Set the timer recording manually (➡ 23).

■ To release the unit from recording standby (➡ 33)

■ To cancel recording when recording has already begun (➡ 33)

■ Notes on timer recording (➡ 34)

To release the unit from recording standby

Even when the unit is turned off, you can display the timer recording list by pressing [PROG/CHECK].

1 **Press [PROG/CHECK].**

2 **Press [▲, ▼] to select the programme and press the "Red" button.**

- The timer icon "⏱" (➡ 34) will change from red to grey.
- You cannot cancel timer recording standby mode as long as even one timer icon "⏱" (red) remains in the timer recording list.
- Press the "Red" button again to activate timer recording standby. (The timer icon "⏱" will change to red.)

Auto Renewal Recording

If you record a programme repeatedly everyday or every week using timer recording, the unit will record the new programme over the old one.

This function can be used only when weekly recording or daily recording is selected. (➡ 23)

1 **Press [PROG/CHECK].**

2 **Press [▲, ▼] to select the programme and press [OK].**

3 **Press [◄, ►] to select "Renew" column.**

4 **Press [▲, ▼] to select "ON" and press [OK].**

Note
- If a programme set for Auto Renewal Recording is protected or while playback is taking place from the HDD, or while copying, the programme will not be overwritten. Instead the programme set for recording will be saved as a separate programme, and this programme will be the one to be overwritten when the next Auto Renewal Recording takes place.
- When there is not enough space on the HDD, the programme may not be recorded completely.

To cancel recording when recording has already begun

Press [INPUT SELECT] or [∧ ∨ CH] to display the programme that you want to stop recording on the TV screen while 2 programmes are simultaneously recording.

1 **Press [■].**

e.g.,

Stop Recording
Recording [TV ONE 001]
Timer recording of this programme in progress. Stop this timer recording?
Yes   No

OK
RETURN
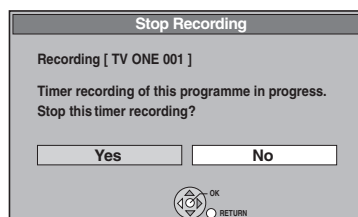
2 **Press [◄, ►] to select "Yes" and press [OK].**

- If you stop a timer recording, it will be cancelled. However, if you have already set the weekly or daily timer recording, the recording will start at the next scheduled time.

Check, change or delete a programme

Even when the unit is turned off, you can display the timer recording list by pressing [PROG/CHECK].

Press [PROG/CHECK].

Timer Recording Remain HDD 75:15 DR			FRI 27.03.2009 21:41
Channel Name	Schedule	Drive/Mod	Space
TVNZ 6 The sitting	FRI 27.03 22:20 - 22:30	HDD DR	OK
TV ONE ONE News Tonight	FRI 27.03 22:30 - 23:00	HDD DR	!
TV2 Supernatural	FRI 22:30 - 23:25	HDD DR	--> 24.04
TV ONE How To Look Good Naked	FRI 27.03 21:30 - 23:30	HDD DR	☒
	New Timer Programme		

OK   Total 4/32   DEL Delete   Page Up
RETURN   ☐ Timer Off   ☐ History List   Page Down

Icons

⊕	Red: Timer recording standby is activated. Grey: Timer recording standby is not activated.
●	This programme is currently recording.
🕒	Part or all of the programme will not be recorded since the programme is overlapping.
📄	The HDD was full so the programme failed to record.
◲	The programme was copy-protected so it was not recorded.
☒	The programme did not complete recording because of some reason.
⟳	Timer programmes set to Auto Renewal Recording (➡ 33).

OK: Displayed if the recording can fit in the remaining space.

→ (Date): For recordings made daily or weekly, the display will show until when recordings can be made (up to a maximum of one month from the present time) based on the time remaining on the HDD.

! : It may not be possible to record because:
- there is not enough space left.
- the number of possible titles has reached its maximum. (➡ 28)

■ To change a programme

Press [▲, ▼] to select the programme and press [OK]. (➡ 23, step 3)

■ To delete a programme

Press [▲, ▼] to select the programme and press [DEL].

■ To confirm the History List

1 Press the "Green" button.
2 Press [▲, ▼] to select the programme and press [OK].
- Reason why the timer recording failed or similar can be confirmed. Press [OK] again to exit.
- Press the "Green" button to return to the previous screen.

■ To exit the timer recording list

Press [PROG/CHECK].

Note

Programmes that failed to record are deleted from the timer recording list at 4 a.m. two days later.

Notes on timer recording

- Timer recording will not be performed if the clock is not set.
- If "TV System" (➡ 88) in the Setup menu was modified to playback a disc or a title while on timer recording standby, return the setting to original before the recording is started.
- Timer recordings are activated regardless of whether the unit is turned on/off.
- Timer recordings begin when the set time is reached even when playing.
- Timer recordings do not begin while copying in normal speed mode.
- The timer recording starts, whether the unit is turned on or off. If the recording starts with the unit turned on, you can turn the unit off without affecting the recording status. This unit's on/off status during the timer recording will not change after the timer recording finishes.
- When you programme successive timer recordings to start immediately one after the other, last 1 minute of earlier programme will not be recorded unless it can perform 2 programmes simultaneous recording.

Programme   Programme   Not recorded
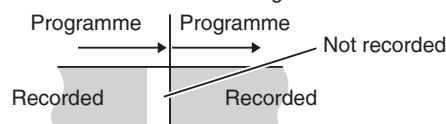
Recorded   Recorded

- If timer recordings overlap around the same time, some programmes will not be recorded depending on the set timer recordings. As for programmes with " 🕒 " displayed on the timer recording list screen, some portion or all of the programmes cannot be recorded. Press [PROG/CHECK] to confirm. (➡ left)

Starting of the timer recording while executing other operation (➡ 99)

Operations in the TV Guide system

Basic operations

Press [GUIDE] to switch between Landscape view and Portrait view.

Landscape view

```
TV Guide                              FRI  27.03.2009 21:42
FRI 27.03  Landscape    All Types    All DVB Channels
21:30-22:30 How To Look Good Naked                      ⓘ
     Time:  21:30   22:00    22:30    23:00   23:30 ·
  1  TV ONE   How To Look Good Naked   ONE News T
  2  TV2      American Idol            Supernatural
  5  Maori Tel  Last Edens  Te Mika Show         News: Te Ka  Maori Televis
  6  TVNZ 6   Shark In The Park   The
  7  TVNZ 7   NZ Views: Fa TV
 20  TVNZ SPO  TVNZ Sport Extra: Resumes Tomorrow At 6pm
 22  Partiamen  Parliament TV
Select Channel
          OK                ⓘ info   ●OPTION     Page Up
          Select Programme  GUIDE Portrait/Landscape  Page Down
          ●RETURN
                 +24 hours      Prog. Type      Favourites
```

⬍

Portrait view

```
TV Guide                              FRI 27.03.2009 21:42
FRI 27.03    Portrait      All Types    All DVB Channels
◄1 TV ONE  2 TV2  5 Maori Tel  6 TVNZ 6  7 TVNZ 7 ►
21:30-22:30   How To Look Good Naked                    ⓘ
22:30-23:00   One News Tonight




Select Programme
         OK              ⓘ info   ●OPTION
         Select Channel  GUIDE Portrait/Landscape
         ●RETURN
               +24 hours    Prog. Type   Favourites
```

To change channels	**Landscape view** Press [▲, ▼] to select a channel. **Portrait view** Press [◄, ►] to select a channel. The TV Guide list appears for this channel.
To view a programme list for another day	• Jump ahead 24 hours Press the "Green" button to jump ahead by one day. • Jump back 24 hours Press the "Red" button. You can only jump back to the current date. Past information cannot be viewed. When jumping, the selected time period may deviate.
To browse through the TV Guide list	Press [∧ ∨ CH].
To see programme information (Programmes with the ⓘ symbol)	Press [STATUS ⓘ]. Additional information (programme name, programme duration, broadcast time, description) is available for these programmes. Press [▲, ▼] to scroll up and down. **To show other pages** Press [CH ∧] (Previous) or [∨ CH] (Next). Press [STATUS ⓘ] again to return to the programme list.

Selecting the programme from the desired programme type or Favourites

This function lets you display a TV Guide list sorted by programme type (e.g. Movies, Sport) or Favourites.

1 From the desired programme type
Press the "Yellow" button to display the list of programme type.
From the desired favourites
Press the "Blue" button to display the list of Favourites.

2 **Press [▲, ▼] to select the desired item.**

```
┌─────────────┐    ┌─────────────────┐
│ Prog.type   │    │  Favourites     │
│ All Types   │    │ All DVB Channels│
├─────────────┤    ├─────────────────┤
│ All Types   │    │ All DVB Channels│
│ Movies      │    │ Free Channels   │
│ News        │    │ Pay Channels    │
│ Entertainment│   │ TV              │
│ Sport       │    │ Radio           │
│ Children's  │    │        ▼        │
│ Music       │    └─────────────────┘
│ Arts/Culture│
│ Current Affairs│
│ Education/Information│
│      ▼      │
└─────────────┘
```
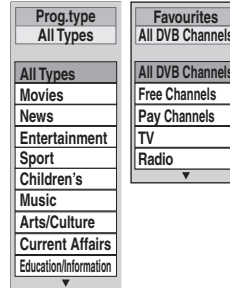
3 **Press [OK].**
• A list appears with all programmes of the selected item.
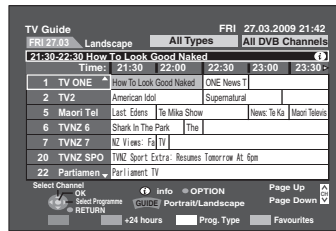• When you select the Landscape view, the unit displays programmes in grey that do not belong to the selected programme type.

```
TV Guide                              FRI  27.03.2009 21:44
FRI 27.03  Landscape    News    All DVB Channels
21:30-22:30 How To Look Good Naked                      ⓘ
     Time:  21:30   22:00    22:30    23:00   23:30 ·
  1  TV ONE   How To Look Good Naked   ONE News T
  2  TV2      American Idol            Supernatural
  5  Maori Tel  Last Edens  Te Mika Show   News: Te Ka  Maori Televis
  6  TVNZ 6   Shark In The Park   The
  7  TVNZ 7   NZ Views: Fa TV
 20  TVNZ SPO  TVNZ Sport Extra: Resumes Tomorrow At 6pm
 22  Partiamen  Parliament TV
Select Channel
          OK               ⓘ info  ●OPTION     Page Up
          Select Programme  GUIDE Portrait/Landscape  Page Down
          ●RETURN
                +24 hours     Prog. Type     Favourites
```

e.g.,
Programme type, "News" is selected in step 2 of Landscape view.

Note
The broadcasters allocate individual programmes to topic areas. This function does not work properly unless the information which distinguishes the programme type and profiles sent from broadcast stations is correct.

4 **Press [▲, ▼, ◄, ►] to select the programme.**

To return to the previous TV Guide list before you have selected the programme type or favourites
Select "All Types" of the programme type or "All DVB Channels" of the favourites in step 2 above.

To return to the previous screen
Press [RETURN ⇦].

To exit the screen
Press [EXIT].

TV Guide data download

• Download automatically while the unit is turned on.
  If the unit is turned off at 3:00 AM, the TV Guide data is downloaded automatically.
• Depending on the state of the unit, data is not downloaded during 2 programmes simultaneous recording and the like.

Advanced playback

- Refer to page 40 for playing DivX.
- Refer to page 58 for playing still pictures.
- Refer to page 65 for playing music.

Note
- When playing back a title recorded on the HDD, ensure that you match the "TV System" setting to the recorded title (➡ 88).
- A disc or title with different "TV System" (➡ 88) may not be able to playback while recording or on standby for the timer recording. You will be able to playback by changing the "TV System" settings in that case, but to prevent failure of the timer recording, change back the settings before the recording starts.
- Depending on the disc, it may take time for the menu screen, pictures, sound, etc. to start.
- The producer of the disc can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc's instructions carefully.
- Discs continue to rotate while menus are displayed. Press [■] when you have finished playback to protect the unit's motor, your television screen and so on.
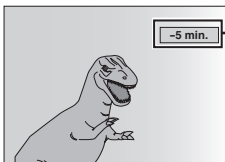
Operation during play

- Depending on the media, some operations may not be possible.

Stop	**Press [■].**
	The stopped position is memorized.
	Resume play function
	Press [▶] (PLAY) to restart from this position.
	Stopped position
	• HDD : Stopped position for each title is memorized.
	• Discs : Only previous stopped position is memorized.
	           The position is cleared if the tray is opened.
	• AVCHD (SD card), **DivX** : Only previous stopped position is memorized except DivX on the USB memory.
	            The position is cleared if the unit is turned off.

Pause	**Press [❙❙].** Press [❙❙] again or [▶] (PLAY) to restart play.
Search	**Press [◀◀] or [▶▶].** • The speed increases up to 5 steps. (+R +R DL +RW up to 3 steps) • Press [▶] (PLAY) to restart play. • Audio is heard during first level search forward. **DivX** : Audio is not heard during all levels search.
Skip	**During play or while paused, press [◀◀◀] or [▶▶▶].** Skip to the title or chapter you want to play. • It will skip to the beginning of chapters (➡ 45) if the title contains chapters. • HDD It will not skip the title. But the title in the grouped titles during "Grouped Playback" (➡ 38) will be skipped. • **DivX** : Press [◀◀◀] to return to the beginning of the title currently playing.

Starting from a selected title
DVD-V AVCHD
	Press the numbered buttons.
	Play starts from the selected title or chapter.
	• AVCHD
	  Input a 3-digit number.
	  e.g.,
	  5: [0] ➡ [0] ➡ [5]
	  15: [0] ➡ [1] ➡ [5]
	• DVD-V
	  Input a 2-digit number.
	  e.g.,
	  5: [0] ➡ [5]
	  15: [1] ➡ [5]
	• While stopped (the screen on the right is displayed on the television), the title is designated. While playing, the chapter is designated.

Quick View Except -RW(V) (It will not work even if it is finalised) -RW(VR), **DivX**	**Press and hold [▶] (PLAY/×1.3).** Play speed is quicker than normal. • Press again to return to normal speed. • Image may not be played back smoothly in case of DR, HG, HX, HE, HL mode titles or AVCHD .
Slow-motion Except **DivX**	**While paused, press [◀◀] or [▶▶].** The speed increases up to 5 steps. • Press [▶] (PLAY) to restart play. • AVCHD Forward direction [▶▶] only. • The unit will pause if slow-motion play is continued for approximately 5 minutes (excluding DVD-V AVCHD).
Frame-by-frame Except **DivX**	**While paused, press [◀] (◀❙❙) or [▶] (❙❙▶).** Each press shows the next frame. • Press and hold to change in succession forward or backward. • Press [▶] (PLAY) to restart play. • AVCHD Forward direction [▶] (❙❙▶) only.

Skipping the specified time (Time Slip) Except **DVD-V** **AVCHD**, **DivX**	1 **Press [TIME SLIP].** 2 **Press [▲, ▼] to select the time and press [OK].** Play skips the specified time. • Each time you press [▲, ▼], the time increases [▲] or decreases [▼] by 1 minute intervals. (Press and hold for 10-minute intervals.) This automatically disappears after approximately 5 seconds. To show the screen again, press [TIME SLIP] again.
Manual Skip Except **DivX**	**Press [MANUAL SKIP].** Each time you press, play restarts approximately 1 minute later.
Aspect	Switch the aspect ratio of the screen. (➡ 78)
Create Chapter **HDD** **RAM**	Chapters are divided at the point pressed. (➡ 45)

Changing audio during play

HDD **RAM** **-RW(VR)** **DVD-V** **AVCHD** **DivX**

Press [AUDIO].

It will switch depending on the contents recorded every time it is pressed.

e.g., **HDD** "Audio LR, eng" is selected.

HDD
PLAY

Audio LR
eng
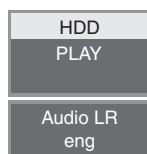
DVD-V **AVCHD**

You can change the audio channel number each time you press the button. This allows you to change things like the soundtrack language (➡ 76, Soundtrack).

| Soundtrack | ⬍ 1 ENG | ᴰᴰ Digital 3/2.1ch |

e.g., English is selected.

Display the subtitle during play

HDD

It is possible to display the subtitles during the playback if the programme with subtitle is recorded with DR mode.

Press [STTL ⧉].

• It will switch between On/Off every time it is pressed.

DVD-V **AVCHD** **DivX**

Display with "Subtitles" in the Disc menu (➡ 76, Subtitles).

When playing DVD-R DL (Dual Layer, single-sided) and +R DL (Double Layer, single-sided) DVD-R DL (Dual Layer, single-sided) and +R DL (Double Layer, single-sided) discs have two writable layers on one side. If there is not enough space on the first layer to record a programme, the remainder is recorded on the second layer. When playing a title recorded on both layers, the unit automatically switches between layers and plays the title in the same way as a normal programme. However, video and audio may momentarily cut out when the unit is switching layers.	**When switching layers:** **Video and audio may momentarily cut** **Second recordable layer** The available space **First recordable layer** Title 1 Title 2 (Inner section of the disc) Playback direction (Outer section of the disc) **DVD-R DL** **+R DL**
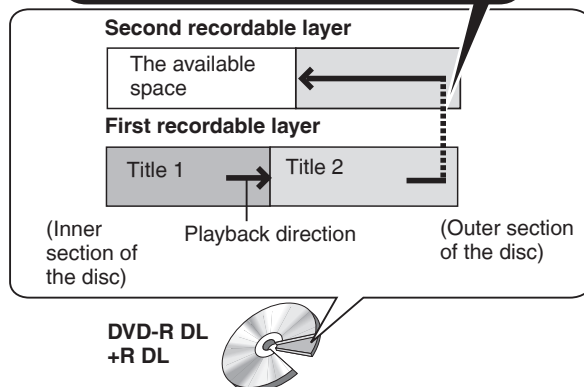
Selecting recorded programmes (titles) to play—DIRECT NAVIGATOR

DIRECT NAVIGATOR screen icons

Icon	Description
●	Currently recording.
🔒	Title protected.
▨	Title that was not recorded due to recording protection
×	Title cannot be played (When copying a title to the HDD, or when data is damaged etc.)
🗁	Groups of titles (**HDD** only)
▮	Title that was recorded but has not yet been played (**HDD** only)
Ⓝ (NTSC) Ⓟ (PAL)	Title recorded using a different encoding system from that of the TV system currently selected on the unit. • Alter the "TV System" setting on this unit to suit (➡ 88).

Switching of the Navigator **HDD**

It is possible to switch the screen display with the following operation even in the DELETE Navigator screens.

① **Press [OPTION].**
② **Press [▲, ▼] to select the item and press [OK].**
   e.g.,

> Release Grouping
> All Titles   — "Grouped Titles" or "All Titles"
> PICTURE / MUSIC
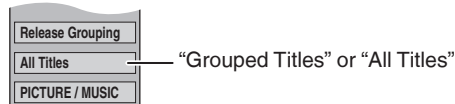
Grouped Titles screen
Two or more titles recorded in the daily/weekly timer recording mode are bundled and displayed as one item.
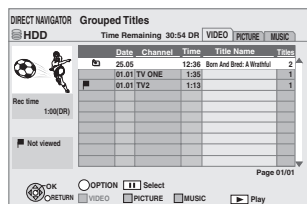
Select the item marked with 🗁 and press [OK] to display the bundled titles.

All Titles screen
Displays all titles.
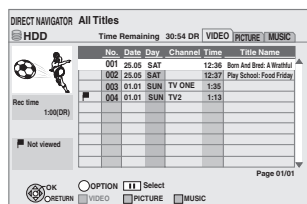
Playback the title that was viewed once **HDD**

You can choose to start the playback from the point you have last stopped, or from the beginning when the resume play function (➡ 36) is operating.
① **Press [OPTION].**
② **Press [▲, ▼] to select "Play" and press [OK].**
③ **Press [◄, ►] to select "Last Played" or "Beginning" and press [OK].**

To sort the titles for easy searching **HDD**

All Titles screen only

This function is convenient when searching for one title to playback from many titles.
① **Press [OPTION].**
② **Press [▲, ▼] to select "Sort" and press [OK].**
③ **Press [▲, ▼] to select the item and press [OK].**
• If you exit the DIRECT NAVIGATOR screen, the sort will be cancelled.

To play grouped titles **HDD**

Grouped Titles screen only

■ Play the selected titles
① **Press [▲, ▼] to select the group and press [OK].**
② **Press [▲, ▼] to select the title and press [OK].**

■ Play the titles continuously (Grouped Playback)
While the Grouped Titles screen is displayed,
Press [▲, ▼] to select the group and press [►] (PLAY).

To edit the group of titles **HDD**

Grouped Titles screen only
① **Press [▲, ▼] to select a title or a group and press [❙❙].**
   A check mark is displayed. Repeat this step until you select all necessary titles.
   • Press [❙❙] again to cancel.
② **Press [OPTION].**
③ **Press [▲, ▼] to select the option and press [OK].**

> Create Group
> Release Grouping

Create Group:
Press [◄, ►] to select "Create" and press [OK].
• Selected titles are bundled to form a group.

Release Grouping:
Press [◄, ►] to select "Release" and press [OK].
• All the titles in the group are released.

Remove:
(Only when titles in a group have been selected)
Press [◄, ►] to select "Remove" and press [OK].
• Selected titles are removed from the group.

■ Regarding the group name
The name of the first title in the group is used as the group name.
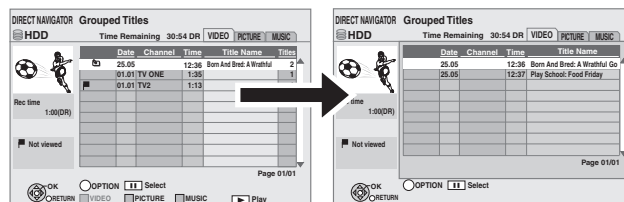
To change the group name
1 Press [▲, ▼] to select the group and press [OPTION].
2 Press [▲, ▼] to select "Edit" and press [OK].
3 Press [▲, ▼] to select "Enter Title Name" and press [OK].
4 Enter the name. (➡72, Entering text)
• Even if the group name is changed, the title names in the group will not be changed.

Note
• This function is only available for videos and not available for music and still pictures.

Playback of the High Definition Video (AVCHD)

AVCHD

It is possible to playback the high definition video (AVCHD) recorded on the Panasonic's video camera, etc. on the disc or SD card.

1 Insert a disc or SD card.

2 Press [▲, ▼] to select "Play Video (AVCHD)" and press [OK].

e.g., RAM

```
         DVD-RAM ( AVCHD )
    Play Video ( AVCHD )
    Copy Video ( AVCHD )
    Play Pictures ( JPEG )

    This disc is play-only and cannot be recorded or
    copied to.
                        OK
                        RETURN
```

e.g., SD

```
            SD Card
    Play Video ( AVCHD )
    Copy Video ( AVCHD )
    Copy Video ( MPEG2 )
    Play Pictures ( JPEG )
    Copy Pictures ( JPEG )

        SD card is inserted.
                        OK
                        RETURN
```
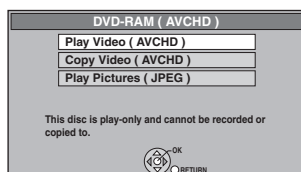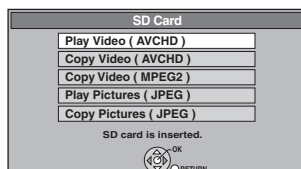
- Display items differ depending on what is recorded in each media.
- If the top menu of the disc or SD card to play was
  – Created: Display the top menu
  – Not created: Display the "DIRECT NAVIGATOR" screen※
  ※ It may not be able to display the "DIRECT NAVIGATOR" screen depending on the equipment used to record.

3 Press [▲, ▼, ◄, ►] to select the title and press [OK].

e.g., SD DIRECT NAVIGATOR screen

```
DIRECT NAVIGATOR   Video ( AVCHD )
SD CARD                          VIDEO
         No. Date Day Time       Title Name
         001 15.12 SAT 19:36 Fantasista
         002 07.12 FRI  12:35 2007.12.07
         ---
Rec time ---
00:00.07 ---
         ---
         ---
         ---
         ---
         ---
                              Page 01/01
    OK      OPTION
    RETURN  VIDEO
```
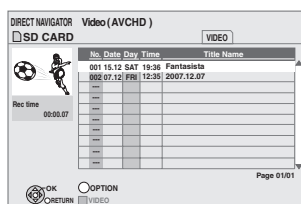
To exit the screen
Press [EXIT].

To display the top menu
Press [DIRECT NAVIGATOR].

When the top menu or "DIRECT NAVIGATOR" is not displayed
Refer to "Starting from a selected title" (➡ 36) to playback.

Operation during play (➡ 36)

Note
- Multiple titles may not playback continuously depending on the disc. Press [DIRECT NAVIGATOR], and playback by selecting the title.
- It may pause for a few seconds on the break of images when editing such as partial deletion is performed.
- High definition video (transfer rate of 24 Mbps or faster) cannot be played back correctly if it was recorded on a DVD compatible with double speed or slower.

Playback of the playlist created on other equipment

RAM -RW(VR)

Creation or editing of playlists cannot be done on this unit.

Preparation
- Insert a disc.
- Press [DRIVE SELECT] to select the DVD drive.

1 While stopped
Press [FUNCTION MENU].

2 Press [▲, ▼] to select "Others" and press [OK].

e.g., RAM

```
DIGA FUNCTION MENU
  DVD-RAM
Time Remaining    4:00 EP
  Playback        Playlists
  Recording       DV Automatic Recording
  Delete          Recording via AV2 input
  Copy            Network
  TV Guide        DVD Management
                  Setup
  Others
         OK
         RETURN
```

3 Press [▲, ▼] to select "Playlists" and press [OK].

4 Press [▲, ▼, ◄, ►] to select the playlist and press [OK].

```
Playlists      Playlist View
  DVD-RAM
  01           02           ---
  05.06(THU) 0:12.12  05.07(MON) 0:07:31
  ---          ---          ---

  Previous    Page 01/01   Next
    OK    OPTION
    RETURN
```
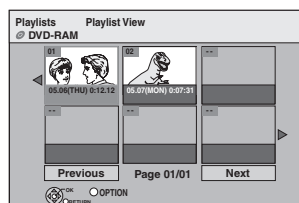
Operation during play (➡ 36)

To return to the previous screen
Press [RETURN ⏎].

To exit the screen
Press [EXIT].

Playing DivX video contents

-R -R DL CD USB

ABOUT DIVX VIDEO:
DivX® is a digital video format created by DivX, Inc. This is an official DivX Certified device that plays DivX video.
You can play DivX video contents recorded with a computer onto DVD-R, DVD-R DL, CD-R/CD-RW and USB memory.

1 Insert a disc or USB memory.

-R -R DL CD

e.g., CD

```
                    CD

         Play Video ( DivX )
         Play Pictures ( JPEG )
         Play / Copy Music ( MP3 )


              Select file type.


                 OK
                 RETURN
```
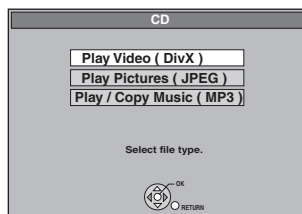
• It will go to step 3 automatically if it is only DivX that is recorded.

USB

```
              USB device
      Play Video ( DivX )
      Copy Video ( AVCHD )
      Copy Video ( MPEG2 )
      Play Pictures ( JPEG )
      Copy Pictures ( JPEG )
      Play / Copy Music ( MP3 )
         USB device is inserted.
              OK
              RETURN
```
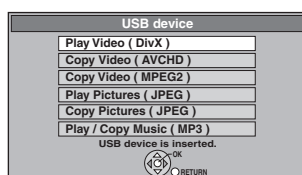
• Display items differ depending on what is recorded in each media.

2 Press [▲, ▼] to select "Play Video (DivX)" and press [OK].

e.g., CD

```
DivX Menu
 CD (DivX)
                    DivX
  No.            Title Name
  001    ABC.divx
  —
  —
  —
  —
  —
  —
  —
  —
  —
  OK    Select a folder from OPTION menu.    Page  01/01
  RETURN                                 OPTION
```
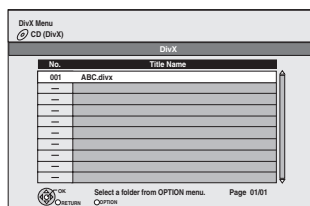
• Files are treated as titles.

3 Press [▲, ▼] to select the title and press [OK].

Play starts on the selected title.

To stop playing
Press [■].

To show other pages
Press [|◄◄, ►►|].

To exit the screen
Press [DIRECT NAVIGATOR].

If the menu screen (➡ above) is not displayed, display it by performing the following operation.
1 Press [FUNCTION MENU].
2 -R -R DL CD
Press [▲, ▼] to select "Playback" and press [OK].

USB
① Press [▲, ▼] to select "Others" and press [OK].
② Press [▲, ▼] to select "USB device" and press [OK].

Note
• Picture sizes set at the recording time may prevent the unit from showing pictures in the adequate aspect. You may be able to adjust the aspect through the TV.
• Successive play is not possible.
• Playback is not possible if recording is performed on the HDD drive or the DVD drive.

Using the tree screen to find a folder

1 While the file list is displayed
Press [OPTION].

2 Press [▲, ▼] to select "Select Folder", and press [OK].

```
DivX Menu          Select Folder
 CD (DivX)

        12_02_2009                 F  1/21
      ⌐ Image001
      ⌐ Image002
      ⌐ Image003
      ⌐ Image004
      ⌐ Image005
      ⌐ Image006
      ⌐ Image007
      ⌐ Image008
      ⌐ Image009
      ⌐ Image010
  OK
  RETURN                        Page  01/01
```
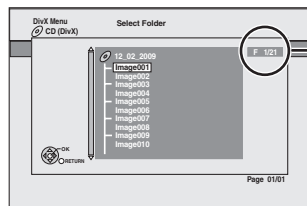
F: Selected folder no./Total folder no. including DivX title.

You cannot select folders that contain no compatible files.

3 Press [▲, ▼] to select a folder and press [OK].
The file list for the folder appears.

To return to the previous screen
Press [RETURN ⤶].

Regarding DivX VOD content

ABOUT DIVX VIDEO-ON-DEMAND:
This DivX® Certified device must be registered in order to play DivX Video-on-Demand (VOD) content.
First generate the DivX VOD registration code for your device and submit it during the registration process. [Important: DivX VOD content is protected by a DivX DRM (Digital Rights Management) system that restricts playback to registered DivX Certified devices. If you try to play DivX VOD content not authorized for your device, the message "Authorisation Error." will be displayed and your content will not play.]
Learn more at:
www.divx.com/vod

Display the unit's registration code.
(➡ 90, "DivX Registration")

DivX Registration

DivX® Video On Demand

Your registration code is : XXXXXXXX ────── 8 alphanumeric characters

To learn more visit www.divx.com/vod
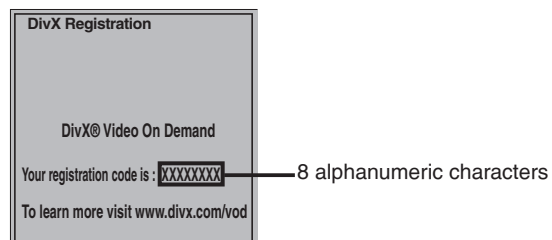
- After playing DivX VOD content for the first time, another registration code is then displayed in "DivX Registration". Do not use this registration code to purchase DivX VOD content. If you use this code to purchase DivX VOD content, and then play the content on this unit, you will no longer be able to play any content that you purchased using the previous code.
- If you purchase DivX VOD content using a registration code different from this unit's code, you will not be able to play this content. ("Authorisation Error." is displayed.)

Regarding DivX content that can only be played a set number of times
Some DivX VOD content can only be played a set number of times. When you play this content, the remaining number of plays is displayed. You cannot play this content when the number of remaining plays is zero. ("Rental Expired." is displayed.)

- The remaining number of plays decreases each time a program is played. However, when playing from the point where play was previously stopped, the remaining number of plays does not decrease due to the resume play function.

Playing back

HDD RAM
-R -R DL -RW(V) +R +R DL (You cannot edit finalised discs.)
+RW
-RW(VR) Only "Properties" is possible.

Editing of the title can be performed with this unit.
For example, an unnecessary part of the title can be deleted. (➡ 43, Partial Delete)
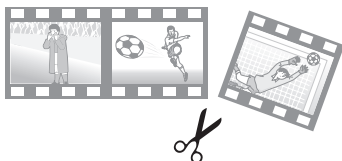
Note
• Once deleted, divided or partially deleted, recorded content cannot be restored to its original state. Make certain before proceeding.
• Restricted recording information remains even after editing (e.g. dividing a title etc.).
• +R +R DL Each time you edit a title the information is saved to the free space on the disc. If you do this numerous times, the amount of free space decreases.
  We recommend that you edit on the HDD and then copy to disc.

Preparation
• Turn on the television and select the appropriate AV input to suit the connection to this unit.
• Turn the unit on.
• Press [DRIVE SELECT] to select the drive containing the recorded title to be edited.
• RAM Release protection (➡ 80, Setting the protection).

1 Press [DIRECT NAVIGATOR].

HDD RAM When "VIDEO" is not selected, press the "Red" button to select "VIDEO".
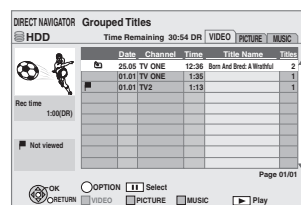
2 Press [▲, ▼] to select the title.

To show other pages
Press [◄◄, ►►].
Multiple editing
Select with [▲, ▼] and press [❙❙]. (Repeat.)
A check mark appears. Press [❙❙] again to cancel.

3 Press [OPTION].

4 Press [▲, ▼] to select the operation and press [OK].

• If you select "Edit", press [▲, ▼] to select the operation and press [OK].
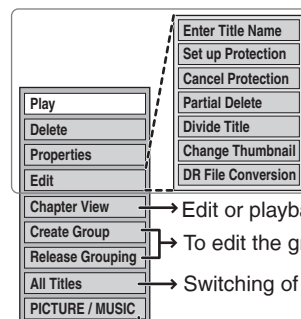
Enter Title Name	
Set up Protection	
Cancel Protection	
Partial Delete	
Divide Title	Refer to "Title operations" (➡ 43, 44).
Change Thumbnail	
DR File Conversion	

Play
Delete
Properties
Edit

Chapter View → Edit or playback the chapter (➡ 45)
Create Group → To edit the group of titles HDD (➡ 38)
Release Grouping
All Titles → Switching of the Navigator HDD (➡ 38)
PICTURE / MUSIC
  → • Playing still pictures (➡ 58)
     • Playing music recorded on HDD (➡ 66)

To return to the previous screen
Press [RETURN ↩].
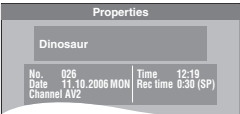
To exit the screen
Press [DIRECT NAVIGATOR].

Title operations

After performing steps 1–4 (➡ 42)

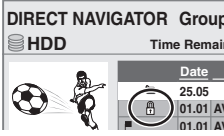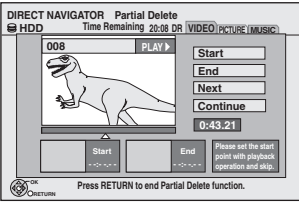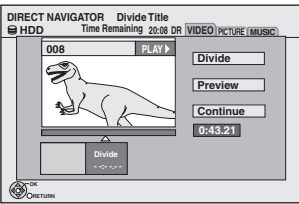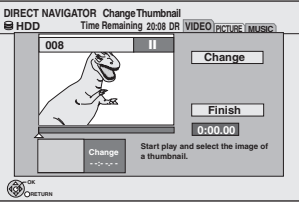|	

Delete※
`HDD` `RAM` `-R` `-R DL` `-RW(V)`
`+R` `+R DL` `+RW`
	Press [◄, ►] to select "Delete" and press [OK].
	• **Once deleted, the recorded contents are lost and cannot be restored.** Make certain before proceeding.
	• The available recording space on DVD-R, DVD-R DL, +R or +R DL does not increase when you delete titles.
	• Available recording space on DVD-RW (DVD-Video format) and +RW increases only when the last recorded title is deleted. It does not increase if other titles are deleted (➡ 24).

Properties
`HDD` `RAM` `-R` `-R DL` `-RW(V)`
`+R` `+R DL` `+RW` `-RW(VR)`
	Information (e.g., time and date) is shown.
	• Press [OK] to exit the screen.
	
	Properties
	Dinosaur
	No. 026 Time 12:19
	Date 11.10.2006 MON Rec time 0:30 (SP)
	Channel AV2

Enter Title Name
`HDD` `RAM` `-R` `-R DL` `-RW(V)`
`+R` `+R DL` `+RW`
	You can give names to recorded titles.
	(➡ 72, Entering text)
	• `HDD` Even if the group name is changed (➡ 38), the title names in the group will not be changed.

Set up Protection※ Cancel Protection※ `HDD` `RAM` `+R` `+R DL` `+RW`	If set, this will protect the title from accidental deletion. **Press [◄, ►] to select "Yes" and press [OK].** The lock symbol appears when the title is protected. **DIRECT NAVIGATOR Group** `HDD` Time Remain Date 25.05 01.01 AV 01.01 AV
Partial Delete `HDD` `RAM` (➡ below, For your reference)	You can remove unnecessary part of the recording. ① **Press [OK] at the start point and end point of the section you want to delete.** • Press [►] (PLAY) to start the playback when the title is paused. ② **Press [▲, ▼] to select "Continue" and press [OK].** • Select "Next" and press [OK] to delete other sections. Up to 20 sections can be set. (go to step ①, above) ③ **Press [◄, ►] to select "Delete" and press [OK].** • Chapter Mark is generated in the scene that was partially deleted. ④ **Press [RETURN ⏎].** **DIRECT NAVIGATOR Partial Delete** `HDD` Time Remaining 20:08 DR `VIDEO` PICTURE MUSIC 008 PLAY ► Start / End / Next / Continue 0:43.21 Start End Please set the start point with playback operation and skip. OK / RETURN Press RETURN to end Partial Delete function.
Divide Title `HDD` `RAM` (➡ below, For your reference)	You can divide a title into two. ① **Press [OK] at the point you want to divide the title.** ② **Press [▲, ▼] to select "Continue" and press [OK].** ③ **Press [◄, ►] to select "Divide" and press [OK].** **To confirm the division point** Press [▲, ▼] to select "Preview" and press [OK]. (The unit plays 10 seconds before and after the division point.) **To change the division point** Restart play and press [▲, ▼] to select "Divide", then press [OK] at the point where you want to divide the title. **Note** • The divided titles retain the title name of the original title. • Video and audio just before and after the dividing point may momentarily cut out. • `HDD` Divided titles form a group of titles. **DIRECT NAVIGATOR Divide Title** `HDD` Time Remaining 20:08 DR `VIDEO` PICTURE MUSIC 008 PLAY ► Divide / Preview / Continue 0:43.21 Divide OK / RETURN

Change Thumbnail
`HDD` `RAM` `-R` `-R DL` `-RW(V)`
`+R` `+R DL` `+RW`
(➡ below, For your reference)
	`-R` `-R DL` `-RW(V)` `+R` `+R DL` It is possible to change the image displayed on the top menu after finalising.
	`+RW` It is possible to change the image displayed on the top menu after creating Top Menu.
	`HDD` Settings for "Change Thumbnail" is saved when high speed copy is performed to DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW.
	① **Press [►] (PLAY) to start play.**
	② **Press [OK] when the image you want to use as a thumbnail is shown.**
	To change the thumbnail
	Restart play and press [▲, ▼] to select "Change", then press [OK] at the point you want to change.
	③ **Press [▲, ▼] to select "Finish" and press [OK].**
	
	DIRECT NAVIGATOR Change Thumbnail
	`HDD` Time Remaining 20:08 DR `VIDEO` PICTURE MUSIC
	008 ❙❙
	Change / Finish
	0:00.00
	Change Start play and select the image of a thumbnail.
	OK / RETURN

※ Multiple editing is possible.

For your reference
• Use Search (➡ 36), Time Slip (➡ 37) to find the desired point.
• To find the desired point correctly, use Slow-motion (➡ 36) and Frame-by-frame (➡ 36).
• To skip to the start or end of a title, press [|◄◄] (start) or [►►|] (end).

Title operations

After performing steps 1–4 (➡ 42)

DR File Conversion HDD
(Converting the recording mode)

DR File Conversion is a function to convert the recording mode of the title in DR mode. The converted title will be copied to HDD. It will take about the same time as playback of the title to convert the recording mode.

1 Press [▲, ▼] to select "Recording Mode".
2 Press [◄, ►] to select the recording mode and press [▼].
3 Press [◄, ►] to select when to start the conversion.

"Now"	Conversion begins immediately after step 5. Recording and playback are not available during conversion. Note also that Timer recording will not be performed during conversion.
"During standby"	The conversion will be performed a short time after switching off the power in a time slot for which no timer recording is set. If the power is switched on during the conversion, the conversion will be cancelled, and start from the beginning when the power is next switched off.
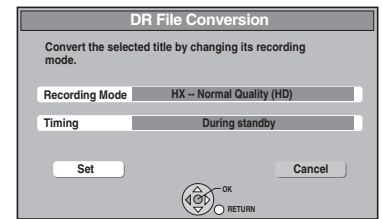
4 Press [▲, ▼, ◄, ►] to select "Set" and press [OK].
5 To begin the conversion "Now":
Press [◄, ►] to select "Start" and press [OK].
• To cancel a conversion that is in progress
Press and hold [RETURN ⍄] for more than 3 seconds.
To begin the conversion "During standby":
Press [OK].
• To remove a conversion setting
After performing steps 1–4 (➡ 42)
Press [◄, ►] to select "Yes" and press [OK].
• Conversion begins soon after the power is switched off.
"COPY" on the unit's display remains lighted during conversion. [Only when "Unit's Display" in the Setup menu is set to "Bright" (➡ 88).]

When "DR file will be converted in standby." is displayed in the DIRECT NAVIGATOR, the conversion has not finished.
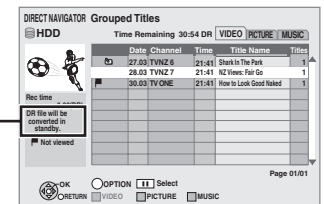
Note
• To use "DR File Conversion", the HDD needs enough storage capacity. Please make space available on the HDD.
• The size of the converted programme may increase for some combinations of programme and recording mode.
• DR File Conversion is paused when the power is turned on while the recording mode is converting with power turned off. Conversion will start from the beginning again once the power is turned off.
• The original programme remains after conversion.
• The converted one of a title including multiple video and audio content will contain only single video and audio content. The "DVB Preferred Language" setting in the Setup menu (➡ 84) is applied.
• Subtitles will not display anymore once a title with subtitles is converted.
• When converting to XP mode, select the audio to record with "Audio Mode for XP Recording" before converting the recording mode. (➡ 87)
• Select the audio to record when converting to "HG", "HX", "HE", or "HL" modes. (➡ 87, Audio channels for HG/HX/HE/HL Recording)
• In titles with the Auto Renewal Recording function (➡ 33) set, a programme may be unintentionally converted while in "During standby". So it is recommended to convert the recording mode by selecting "Now".
• If converted to the "HG", "HX", "HE", or "HL" mode, an image of the aspect ratio 4:3 becomes one of the aspect ratio 16:9 with the side panel. (➡ 78)

`HDD` `RAM`
`-R` `-R DL` `-RW(V)` `-RW(VR)` `+R` `+R DL` `+RW` Only playback of chapter is possible.

Regarding Chapters
Programmes are recorded as a single title consisting of one chapter.

Title
Chapter

Start ⬇ End
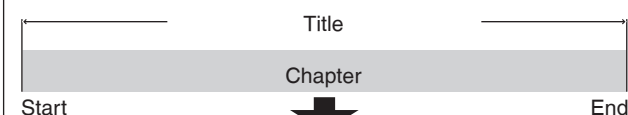
`HDD` `RAM` You can divide a title into multiple chapters. Each section between the division points (Chapter Marks) becomes a chapter.

Title			
Chapter	Chapter	Chapter	Chapter

Chapter Mark
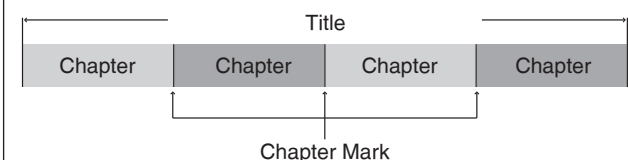
- The maximum number of chapters on a disc: (Depends on the state of recording.)
  `HDD` : Approx. 1000 per title
  `RAM` : Approx. 1000

Note
- `HDD` You will not be able to perform the Resume play function (➡ 36) or "Change Thumbnail" (➡ 43) with a title with the maximum number of chapters.
- `HDD` Chapter Marks created will be maintained when copied or used "DR File Conversion" (➡ 44). But, it will not maintain the exceeded amount if it exceeds the maximum chapter numbers.

Create Chapter Mark

During the playback or pause
Press [CREATE CHAPTER].

- Chapters are divided at the point pressed.

Chapter has been created.
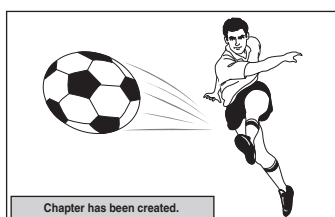
■ To delete the Chapter Mark
① **While paused**
Press [|◀◀, ▶▶|] and skip to the location you want to delete.
② **Press [CREATE CHAPTER].**
③ **Press [◀, ▶] to select "Yes" and press [OK].**

Editing and playing chapters

Preparation
- Press [DRIVE SELECT] to select the HDD or DVD drive.
- `RAM` Release protection (➡ 80, Setting the protection).

1 Press [DIRECT NAVIGATOR].
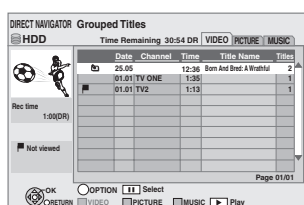
`HDD` `RAM` When "VIDEO" is not selected, press the "Red" button to select "VIDEO".

2 Press [▲, ▼] to select the title and press [OPTION].

3 Press [▲, ▼] to select "Chapter View" and press [OK].

4 Press [◀, ▶] to select the chapter.
To start play Press [OK].
To edit Step 5.
To create Press the "Green" button. (➡ below)
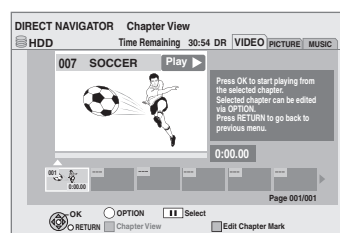
5 Press [OPTION], then [▲, ▼] to select the operation and press [OK].

Delete Chapter
Combine Chapters
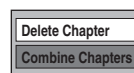
➡ Refer to "Chapter operations" (➡ below).

To return to the previous screen
Press [RETURN ⤶].

To exit the screen
Press [EXIT].

Chapter operations

After performing steps 1–4 (➡ left)

Create Chapter	Select the point where you want to start a new chapter while viewing the title.
	1 Press [OK] at the point you want to divide. • Repeat this step to divide at other points. **2 Press [RETURN ⤶] to go to Chapter View screen.**
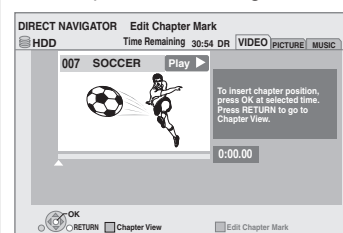
After performing steps 1–5 (➡ left)

Delete Chapter※	**Press [◀, ▶] to select "Delete" and press [OK].** • Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding. • Select "Combine Chapters" (➡ below) when you only want to delete the division point between chapters. (The recorded contents will not be deleted.)
Combine Chapters	**Press [◀, ▶] to select "Combine" and press [OK].** • The selected chapter and following chapter are combined.

※ Multiple editing (➡ 60) is possible.

Copying titles

There are following copying methods.

Copy Title Playing	Copy the playing title on the HDD to the disc. (➡ 49)
Copy	Make a copying list and then copy. You can set the unit to copy titles in the way you want. (➡ 50)
Copy AVCHD	High definition video (AVCHD format) can be copied from disc, SD card or USB. (➡ 56)

■ Copy direction

Copy source	Copy destination	Possible copying method	Copy speed
[HDD]	[RAM] [-R] [-R DL] [-RW(V)] [+R] [+R DL] [+RW]	Copy Title Playing Copy	• The high speed copy may not be possible depending on the destination disc or the title to copy. (➡ 48, When is high speed copy not possible?)
[RAM] [-RW(VR)]	[HDD]	Copy	High speed
[+RW]	[HDD]	Copy	Normal speed
Before finalise [-R] [-R DL] [-RW(V)] [+R] [+R DL]	Cannot copy		
[DVD-V] ※ **After finalise** [-R] [-R DL] [-RW(V)] [+R] [+R DL]	[HDD]	Copy	Normal speed
SD Video (MPEG2 format) • From an SD card or Panasonic's video camera, etc. (from USB)	[HDD] [RAM]	Copy	High speed
	[-R] [-R DL] [-RW(V)] [+R] [+R DL] [+RW]	Cannot copy	
HD Video (AVCHD format) • From discs	[HDD]	Copy AVCHD	High speed
HD Video (AVCHD format) • From an SD card or Panasonic's video camera, etc. (from USB)	[HDD]	Copy AVCHD	High speed
	[RAM] [-R] [-R DL] [-RW(V)] [+R] [+R DL] [+RW]	Cannot copy	

※ Almost all DVD-Video on sale have been treated to prevent illegal copying. Any software that has been treated so, cannot be copied using this unit.

■ Copy speed

(○: Possible, –: Impossible)

	High speed mode	Normal speed mode
Features	Copy with shorter time than the recorded time of the title with same quality (recording mode).	It will take same or longer time as the recorded time of the titles to be copied. • Even if you select a recording mode with better picture quality than the original, the picture quality does not improve.
Are chapters maintained?	○^{*1}	○^{*1}
Are thumbnails maintained?	○	○^{*2}
Recording and Playing while Copying	○^{*3}	–

^{*1} Position of the chapter might shift slightly.
　It will not maintain the exceeded amount if it exceeds the maximum chapter numbers on a disc.
　– RAM -R -R DL -RW(V) : Approx. 1000
　– +R +R DL +RW : Approx. 254
　(Depends on the state of recording.)
^{*2} Position of the thumbnails might shift slightly. (May not be maintained depending on the state of recording.)
^{*3} Possible only with titles on the HDD
　[However it is not possible when copying with finalisation/creating Top Menu or when copying SD Video (MPEG2 format) or when copying HD Video (AVCHD format).]
　–You cannot perform chasing play or edit, etc. while copying.
　–Still pictures or music cannot be played.

■ Frequently Asked Questions

When is high speed copy not possible?	It will copy at normal speed in following cases: • Copying to `RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` in following conditions: 　– Titles in DR, HG, HX, HE, HL mode 　– Title of the AVCHD copied to the HDD • Copying to `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` in following conditions: 　– Copy including a title that was recorded to HDD with "Rec for High Speed Copy" set to "Off" 　– Titles that contain many deleted segments 　– Titles that have been copied to the HDD from an SD card or Panasonic's video camera, etc. (➡ 57) 　– `+R` `+R DL` `+RW` Titles recorded in "EP" mode and "FR (recordings 5 hours or longer)" mode. 　– `+R` `+R DL` `+RW` Titles recorded in 16:9 aspect 　– `-R` `-R DL` `-RW(V)` Titles recorded in 16:9 aspect using "EP" mode or "FR (recordings 5 hours or longer)" mode • Setting "Recording Mode" to anything but "High Speed" in "Copy" • Copying from +RW to HDD • `-R` `-R DL` `-RW(V)` `+R` `+R DL` When copying from the finalised disc to HDD
When copying titles in high speed mode to high speed recording compatible discs	The sound of the disc rotating becomes louder than normal. If you want copy to perform more quietly, select "Normal (Silent)" in "DVD Speed for High Speed Copy" in the Setup menu (➡ 85).
`-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` **When copying to disc in normal speed mode**	When not copying in high speed mode, titles are temporarily copied at normal speed to the HDD and then copied at high speed to the disc. The titles that were temporarily copied to the HDD are then deleted. You cannot copy to the disc in the following cases. 　– When there is not enough free space on the HDD. (When copying to a new blank disc, if you intend to fill a new disc when copying to it, the equivalent of up to 4 hours of free space in SP mode is needed on the HDD.) 　– When the number of titles recorded to the HDD and the number of titles to be copied to the disc is greater than 499 in total.
When stopping the copy during copy	**When High-speed copying** All titles that have completely copied at the point cancelled are copied. **When Normal Speed copying** Copies until the point cancelled. • `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` If copy is cancelled during the step while temporarily copying to the HDD, then nothing will be copied. However, if copy is cancelled during the step while copying to disc from the HDD, then only titles completely copied at the point cancelled are copied. Even if the title was not copied to the DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW, the amount of remaining writable disc space becomes less.
Is it possible to copy to the disc, SD card or USB memory after copying HD video (AVCHD format) to the HDD?	• It can be copied to the disc. 　– It will be copied with SD quality. (It cannot be copied as it is in HD picture quality.) • It cannot be copied to SD card or USB memory.
MPEG2 or AVCHD files are not recognised.	• Only MPEG2 or AVCHD recorded or edited on a Panasonic's video camera will be recognised. USB memory or an SD card that contains MPEG2 or AVCHD recorded on devices other than a Panasonic's video camera may not be recognised.

Copy Title Playing

Copy the playing title on the HDD to the disc.
• It will start copying from the beginning of the title regardless of the playing position.

`HDD` → `RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW`

1 Playback the title to copy.

When copying the title in DR mode with multiple audio and subtitles
• Only the audio selected in "Audio Selection" in the Disc menu will be copied for the multiple audio. (➡ 76)
Subtitle will not be copied.

2 Press [OPTION].

3 Press [▲, ▼] to select "Copy Title Playing" and press [OK].

4 Press [◀, ▶] to select "Start" and press [OK].

To stop copying
Press and hold [RETURN ⤺] for 3 seconds.

To return to the previous screen
Press [RETURN ⤺].

Recording and playing while copying
You can record and play using the HDD while high speed copying.
Press [OK] to disappear the screen display.
• Still pictures and music recorded on the HDD cannot be played.
• **To confirm the current progress**
Press [STATUS ⓘ].

■ **Speed and recording mode when copying**

Titles in DR, HG, HX, HE or HL mode

Copy destination	Copy Speed	Recording mode
`RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW`	Normal speed	FR

Titles in XP, SP, LP, EP or FR mode

Copy destination	Copy Speed	Recording mode
`RAM`	High speed[*1]	Same as title to be copied[*1]
`-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW`	High speed[*1] [*2]	Same as title to be copied[*1]

[*1] When the copy destination (disc) does not have enough space, copy will perform at normal speed in FR mode.

[*2] Titles that were recorded with "Rec for High Speed Copy" (➡ 85) set to "Off" will be copied with normal speed. In the following cases, even if "Rec for High Speed Copy" is set to "On", copy will perform at normal speed.
  • `+R` `+R DL` `+RW` When the copying source was recorded in "EP" or "FR (recordings 5 hours or longer)" mode.
  • When the copy destination (disc) does not have enough space.
  • When the title aspect for the copying source and "Aspect for Recording" (➡ 85) do not match.
  • When the title aspect for the copying source is 16:9:
    – `+R` `+R DL` `+RW`
    – `-R` `-R DL` `-RW(V)` copying source was recorded in "EP" or "FR (recordings 5 hours or longer)" mode.

To play DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R and +R DL on other players, it is necessary to finalise them after copy (➡ 82). To play +RW on other players, we recommend you create top menu (➡ 82), but they may not play on all DVD players.
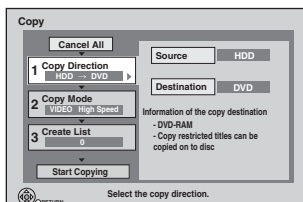
Copying using the copying list—Copy

`HDD` ⇆ `RAM` `+RW`
`-RW(VR)` → `HDD`
`HDD` → `-R` `-R DL` `-RW(V)` `+R` `+R DL`
You can order titles as desired for copy to disc.

1 While stopped
Press [FUNCTION MENU].

2 **Press [▲, ▼] to select "Copy" and press [OK].**

```
Copy
        Cancel All
                        Source        HDD
1  Copy Direction
   HDD → DVD            Destination    DVD
2  Copy Mode           Information of the copy destination
   VIDEO  High Speed     - DVD-RAM
3  Create List           - Copy restricted titles can be
   0                       copied on to disc
        Start Copying
   RETURN          Select the copy direction.
```
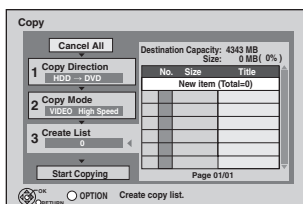
• If you are not going to change each setting (➡ step 7).

3 **Set the copy direction.**
• If you are not going to change the copying direction (➡ step 4).
① **Press [▲, ▼] to select "Copy Direction" and press [▶].**
② **Press [▲, ▼] to select "Source" and press [OK].**
③ **Press [▲, ▼] to select the drive and press [OK].**
If you select "HDD", "Destination" is automatically set to "DVD" or vice versa. (➡ go to step ⑥)
④ **Press [▲, ▼] to select "Destination" and press [OK].**
⑤ **Press [▲, ▼] to select the drive and press [OK].**
The same drive as the copy source cannot be selected.
⑥ **Press [◀] to confirm.**

4 **Set the recording mode.**
• If you are not going to change the recording mode (➡ step 5).
① **Press [▲, ▼] to select "Copy Mode" and press [▶].**
② **Press [▲, ▼] to select "Format" and press [OK].**
③ **Press [▲, ▼] to select "VIDEO" and press [OK].**
④ **Press [▲, ▼] to select "Recording Mode" and press [OK].**
⑤ **Press [▲, ▼] to select the mode and press [OK].**
⑥ **Press [◀] to confirm.**

5 **Register titles for copy.**
• If you are going to copy a registered list without making any changes to it (➡ step 6).
① **Press [▲, ▼] to select "Create List" and press [▶].**

```
Copy
        Cancel All       Destination Capacity:  4343 MB
                                       Size:    0 MB( 0% )
1  Copy Direction         No.  Size       Title
   HDD → DVD                   New item (Total=0)
2  Copy Mode
   VIDEO  High Speed
3  Create List
   0
        Start Copying                        Page 01/01
   OK                OPTION  Create copy list.
   RETURN
```

② **Press [▲, ▼] to select "New item" and press [OK].**

```
Create List   Grouped Titles
   HDD
                 Date   Channel  Time   Title Name        Title
              25.05                     12:36  Born And Bred: A Wrathful   2
              01.01 TV ONE       1:35                          1
              01.01 TV2          1:13                          1
Time    12:36
Rec time
       0:52(SP)
                                                   Page 01/01
   OK           OPTION   Select
   RETURN
```

③ **Press [▲, ▼] to select the title and press [❚❚].**
A check mark is displayed. Repeat this step until you select all necessary items.
• Press [❚❚] again to cancel.
• The items will be copied in the order of the copying list. If you want to specify the order, repeat selecting one item at a time.
• When copying to a disc using high speed mode, only titles indicated with "▶▶○" can be registered.
• **To show other pages**
Press [|◀◀, ▶▶|].

④ **Press [OK].**
• **To edit the copying list (➡ 51)**
You cannot start copying when the value of "Size" (➡ 51) exceeds 100% ("Destination Capacity" is not sufficient).
⑤ **Press [◀] to confirm.**

6 **Set to make it possible to play on other equipment.**
("Finalise" or "Create Top Menu")
(`HDD` → `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` only)
If it is not to be set (➡ step 7).
① **Press [▲, ▼] to select "Other Setting" and press [▶].**
② **Press [OK].**
③ **Press [▲, ▼] to select "On" or "Off" and press [OK].**
• **If "On" is selected**
– `-R` `-R DL` `-RW(V)` `+R` `+R DL` After finalising, the discs become play-only and you can also play them on other DVD equipment. However, you can no longer record or edit.
– `+RW` Create the Top Menu. Top Menu is a convenient function. We recommend you create the menu before playing a +RW disc on other equipment.
④ **Press [◀] to confirm.**

7 **Press [▲, ▼] to select "Start Copying" and press [OK].**

8 **Press [◀, ▶] to select "Yes" and press [OK] to start copying.**

To return to the previous screen in steps 1 to 8
Press [RETURN ⑤].

While copying after step 8
To stop copying
Press and hold [RETURN ⑤] for 3 seconds.
(You cannot stop while finalising or creatinig Top Menu.)

Recording and playing while copying
You can record and play using the HDD while high speed copying. (Only when high speed copying without finalising or creating Top Menu).
Press [OK] to disappear the screen display.
• Still pictures and music recorded on the HDD cannot be played.
• **To confirm the current progress**
Press [STATUS ⓘ].

Note
• Titles in the grouped titles and other titles cannot be registered simultaneously.

Copying list icons and functions

Copying list indicators

▶▶◎	Titles that can be copied in high speed mode to the inserted disc
(!)	Title contains still picture(s) • Still picture(s) cannot be copied.
Ⓝ (NTSC) Ⓟ (PAL)	Title recorded using a different encoding system from that of the TV system currently selected on the unit. • Titles displaying these marks cannot be selected.

Data size of each registered item

Destination C...	Size: 0 MB (0%)
No.	Size	Title
	New item	(Total=0)
	Page 01/01	
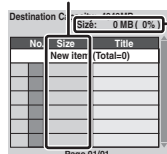
Size:
Data size recorded to the copy destination
• When copying at normal speed, the total data size will change according to the recording mode.
• The total data size shown may be larger than the sum of the data sizes for each registered item, because of data management information being written to the copy destination, etc.

To play DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R and +R DL on other players, it is necessary to finalise them after copy (➡ 82). To play +RW on other players, we recommend you create top menu (➡ 82), but they may not play on all DVD players.

■ To check the properties of a title and sort Copying list
After performing steps 5–② (➡ 50)
1 Press [▲, ▼] to select the title and press [OPTION].

Properties
Sort
Grouped Titles
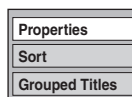
2 Press [▲, ▼] to select "Properties" or "Sort" and press [OK].

Properties:
The name, recording date, channel etc. of the selected title are shown. (You cannot select a title if it has a check mark.)

Sort (All Titles screen only):
Press [▲, ▼] to select the item and press [OK].
This changes the way that titles are displayed. You can select to display titles by No., Date, Day, Channel, Start time and Title name. (You cannot select a title if it has a check mark.) If you close the Copying list screen, the display order is cancelled.

■ To edit the copying list
Select the item after step 5–④ (➡ 50)
① Press [OPTION].
② Press [▲, ▼] to select the operation and press [OK].
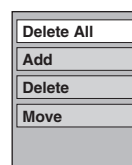
Delete All
Add
Delete
Move

Delete All:
Delete all items registered on the copying list.
Press [◀, ▶] to select "Yes" and press [OK].

Add:
Add new items to the copying list.
1 Press [▲, ▼] to select the title and press [❚❚].
A check mark is displayed. Repeat this step until you select all necessary items.
• Press [❚❚] again to cancel.
2 Press [OK].

Delete:
Delete the selected items.
Press [◀, ▶] to select "Yes" and press [OK].

Move:
Move selected items or change the order of items on the copying list.
Press [▲, ▼] to select the destination and press [OK].

To cancel all registered copying setting and lists
After performing steps 1–2 (➡ 50)
1 Press [▲, ▼] to select "Cancel All" and press [OK].
2 Press [◀, ▶] to select "Yes" and press [OK].
• The settings and lists may be cancelled in the following situations.
– When a title, still picture, etc. has been recorded or deleted at the copy source
– When steps have been taken, for instance, to turn off the unit, open the tray, change the copy direction, etc.

Copying a finalised DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R and +R DL

DVD-V → HDD

You can copy the content of finalised DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, and +R DL to the HDD and re-edit. While playing a disc, the content being played is copied to the HDD according to the set time.
● When "Rec for High Speed Copy" (➡ 85) is set to "On" and you make a copy, the copy will be made using the picture size selected in "Aspect for Recording" (➡ 85) in the Setup menu.

> ● **Operations and on screen displays during copy are also recorded.**
> ● Almost all DVD-Video on sale have been treated to prevent illegal copying, and cannot be copied.

Preparation
● Insert the finalised disc (➡ 15).

After performing steps 1–4 ("Format" is automatically set to "DVD-Video") (➡ 50, Copying using the copying list—Copy)

1 Set "Copy Time".

● If you are not going to change the setting (➡ step 2).

① Press [▲, ▼] to select "Copy Time" and press [▶].
② Press [▲, ▼] to select "Time Setting" and press [OK].

● Setting the unit to copy all the content on the disc
③ Press [▲, ▼] to select "Off" and press [OK].
④ Press [◄] to confirm.
Copy will continue until there is not enough available recording space on the HDD.

● Setting the copying time
③ Press [▲, ▼] to select "On" and press [OK].
④ Press [▲, ▼] to select "Copy Time" and press [OK].

```
Copy
        Cancel All
1  Copy Direction
     DVD → HDD
2  Copy Mode           2   Hour    00   Min.
     DVD-Video  SP
3  Copy Time           Set the time a few minutes longer.
     2:00
        Start Copying
  OK
  RETURN       Press OK to change the setting.
```
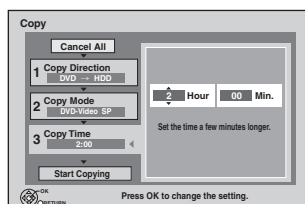
⑤ Press [◄, ▶] to select "Hour" and "Min." and press [▲, ▼] to set the recording time.
⑥ Press [OK].
⑦ Press [◄] to confirm.
Copying to the HDD continues for the set time even after the content being played finishes.

● Set a few minutes longer than the source title, in order to include the operation time before play begins.

2 Press [▲, ▼] to select "Start Copying" and press [OK].

3 Press [◄, ▶] to select "Yes" and press [OK] to start copying.

The disc top menu is displayed.
● Disc play automatically begins from title 1 when "Title 1" is selected from the "Auto-Play Select" menu when finalising the disc (➡ 82).

4 When the top menu is displayed
Press [▲, ▼, ◄, ▶] to select the title you want to start copying, and press [OK].

```
My favourite                        01/02
      01                    02
      Chapter 1             Chapter 2
      03                    04
      Chapter 3             Chapter 4
                            06
```
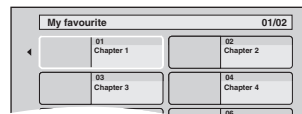
While playing in order, all the titles after the selected title are recorded until the set time. (After the last title on the disc has finished playing the top menu is recorded until the set time is reached.)

To return to the previous screen in steps 1 to 3
Press [RETURN ↩].

To stop copying after step 3
Press [■].
You can also press and hold [RETURN ↩] for 3 seconds to stop copying.
● If stopped partway, copying will be up to that point.

Note
● The screen on the right is recorded at the beginning.
● The content is recorded as 1 title from the start of copy to the end.
● If play does not begin automatically or if the top menu does not display automatically, press [▶] (PLAY) to start.
● Even if you copy a high quality video/audio DVD, the original picture and audio quality cannot be exactly replicated.
● If you want to copy a title from a DVD-RW (DVD Video Recording format), create a copying list and then copy (➡ 50, Copying using the copying list—Copy).

Recording broadcasts from external equipment

HDD

See also "Important notes for recording" (➡ 26).

e.g., Connecting to the AV2 terminals on the front
• Turn off the unit and external equipment before connecting.

This unit

S VIDEO   VIDEO   L/MONO - AUDIO- R
AV2 IN

S Video cable※

Audio/video cable

External equipment

Connect to Audio/Video output terminals.
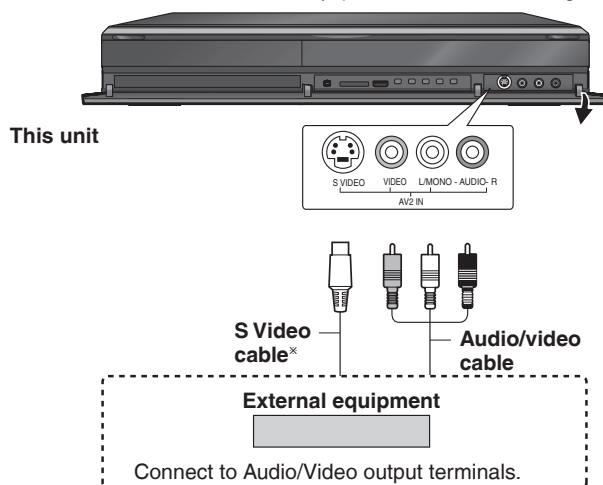
※ The S VIDEO terminal achieves a more vivid picture than the VIDEO terminal.

Preparation
• Press [DRIVE SELECT] to select the HDD drive.
• When the output signal from the external equipment is NTSC, change "TV System" to "NTSC" in the Setup menu (➡ 88).

1 **While stopped**

Press [INPUT SELECT] to select the input channel for the equipment you have connected.

e.g., If you have connected to AV2 input terminals, select "AV2".

2 ## Press [REC MODE] to select the recording mode.

• DR, HG, HX, HE, HL, FR mode cannot be selected.

3 ## Select the channel on the other equipment.

4 ## Press [● REC].

Recording starts.

To skip unwanted parts
Press [❙❙] to pause recording. (Press again to restart recording.)

To stop recording
Press [■].

Copying

With Other Equipment

e.g., Connecting to the AV2 or DV input terminals on the front

• Turn off the unit and other video equipment before connecting.

This unit

S VIDEO   VIDEO   L/MONO - AUDIO- R
DV IN   AV2 IN

**DV cable
(IEEE 1394, 4-pin)**   **S Video cable※**   **Audio/video cable**

Other video equipment

Connect to Audio/Video output terminals.

If the audio output of the other equipment is monaural
Connect to L/MONO on the AV2 input terminals at the front.
※ The S VIDEO terminal achieves a more vivid picture than the VIDEO terminal.

When recording from the unit's DV terminal
• Use only DV cable with ferrite core.
• Select the type of audio recording from "Audio Mode for DV Input" in the Setup menu (➡ 87).
• When recording from DV equipment (e.g., digital video camcorder), you can record audio/video recordings from DV tape only.
• When "Rec for High Speed Copy" (➡ 85) is set to "On" and you make a copy, the copy will be made using the picture size selected in "Aspect for Recording" (➡ 85) in the Setup menu.

Recording of 16:9 image such as wide broadcasting (➡ 26)

Note
• If video is copied from another piece of equipment to this unit, then the video quality will be degraded.
• While copying from DV input or executing "Recording via AV2 input" (➡ 55)
  – Copy will stop when timer recording starts.
  – Chasing playback, simultaneous rec and play, switching of the broadcast or input cannot be performed.

Manual recording

HDD
Preparation
• Press [DRIVE SELECT] to select the HDD drive.
• When recording bilingual programmes, select "M 1" or "M 2" on the external equipment.
• When the output signal from the external equipment is NTSC, change "TV System" to "NTSC" in the Setup menu (➡ 88).

1 **While stopped**
Press [INPUT SELECT] to select the input channel for the equipment you have connected.
e.g., If you have connected to AV2 input terminals, select "AV2".

2 **Press [REC MODE] to select the recording mode.**
• DR, HG, HX, HE, HL, FR mode cannot be selected.

3 **Start play on the other equipment.**

4 **When you want to start recording**
Press [● REC].
Recording starts.

To skip unwanted parts
Press [❚❚] to pause recording. (Press again to restart recording.)

To stop recording
Press [■].

Using Flexible Recording via AV input (➡ 55)

Almost all videos and DVD-Video on sale have been treated to prevent illegal copying. Any software that has been treated so, cannot be recorded using this unit.

DV Automatic Recording

HDD RAM -R -RW(V) +R +RW
Preparation
1 Turn off this unit and DV equipment, then connect the equipment with the unit's DV input terminal (➡ left).
2 Turn on this unit.
• If you record to a disc, insert a disc (➡ 15).
• RAM If the disc is protected, release protection (➡ 80, Setting the protection).
• When the output signal from the external equipment is NTSC, change "TV System" to "NTSC" in the Setup menu (➡ 88).

1 **Turn on the DV equipment, and pause play at the point you want recording to start.**
The following screen appears.

DV Automatic Recording

Record from the DV unit?

Rec to HDD
Rec to DVD

OK
RETURN
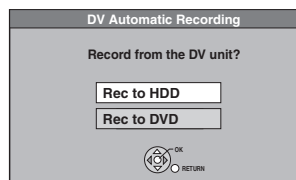
• **When the screen is not displayed**
  After performing step 1
  1 Press [FUNCTION MENU].
  2 Press [▲, ▼] to select "Others" and press [OK].
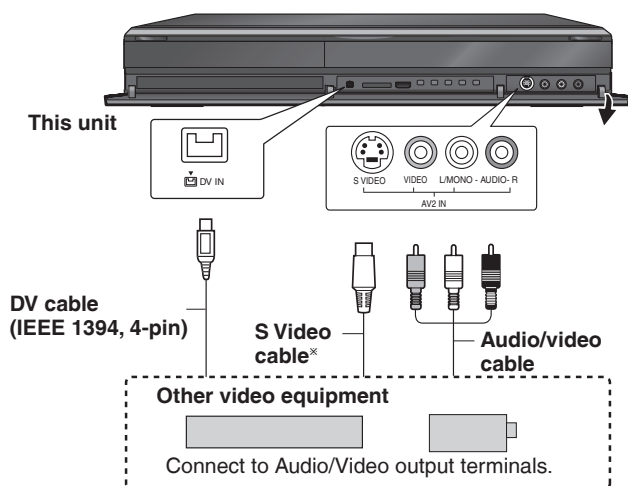 3 Press [▲, ▼] to select "DV Automatic Recording" and press [OK].
     ➡ Go to step 2.

2 **Press [▲, ▼] to select "Rec to HDD" or "Rec to DVD" and press [OK].**
• It may take a while for the next screen to display while preparing to record.

3 **Press [REC MODE] to select the recording mode.**
• DR, HG, HX, HE, HL, FR mode cannot be selected.

4 **Press [◄, ►] to select "Start" and press [OK].**
Recording starts.

To stop recording
Press [■].

Note
• Only one piece of DV equipment (e.g., Panasonic's video camera, etc.) can be connected to the unit via the DV input terminal.
• It is not possible to operate the unit from the connected DV equipment.
• The DV input on this unit is for use with DV equipment only. (It cannot be connected to a computer, etc.)
• The DV equipment name may not be shown correctly.
• Depending on the DV equipment, the images or audio may not be input properly.
• The date and time information on the tape of the DV equipment will not be recorded.
• You cannot record and play simultaneously.
• -R +R It may not be able to record after repeating about 30 times of step 4 or recording or editing.
• -R -RW(V) After finalising, chapters for every 5 minutes will be created.
• +R After finalising, chapters for every 8 minutes will be created.
• +RW Regardless of creating the top menu, chapters for every 8 minutes will be created.

If the DV Automatic Recording function does not work properly, check the connections and DV equipment settings, and turn the unit off and back on.
If that does not work, follow the instructions for manual recording (➡ left).

Recording via AV2 input

`RAM` `-R` `-RW(V)` `+R` `+RW`

It is possible to record to disc from equipment connected to the AV2 input terminals.

Recording mode is FR mode. (➡ 28)

Preparation
- Press [DRIVE SELECT] to select the DVD drive.
- `RAM` If the disc is protected, release protection (➡ 80, Setting the protection).
- When the output signal from the external equipment is NTSC, change "TV System" to "NTSC" in the Setup menu (➡ 88).

1 While stopped
Press [FUNCTION MENU].

2 **Press [▲, ▼] to select "Others" and press [OK].**

3 **Press [▲, ▼] to select "Recording via AV2 input" and press [OK].**
- It may take a while for the next screen to display while preparing to record.
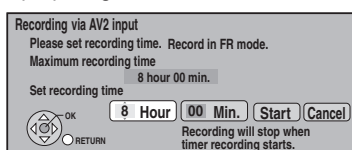
```
Recording via AV2 input
  Please set recording time.  Record in FR mode.
  Maximum recording time
                          8 hour 00 min.

  Set recording time

  ⊙  OK     8  Hour  00  Min.   Start   Cancel
      RETURN              Recording will stop when
                         timer recording starts.
```

4 **Press [◄, ►] to select "Hour" and "Min." and press [▲, ▼] to set the recording time.**
- You can also set the recording time with the numbered buttons.
- You cannot record more than 8 hours.

5 **Start play on the other equipment.**

6 When you want to start recording
Press [◄, ►] to select "Start" and press [OK].
Recording starts.

To exit the screen without recording
Press [RETURN ⤺].

To stop recording partway
Press [■].

To show the remaining time
Press [STATUS ⓘ].

Note
- `-R` `+R` It may not be able to record after repeating about 30 times of step 6 or recording or editing.
- `-R` `-RW(V)` After finalising, chapters for every 5 minutes will be created.
- `+R` After finalising, chapters for every 8 minutes will be created.
- `+RW` Regardless of creating the top menu, chapters for every 8 minutes will be created.

Flexible Recording via AV input
(Recording that fits the size of a new DVD)

`HDD`

The title is recorded to the size of a new DVD (4.7 GB) by automatically selecting optimal quality between XP and EP (8 hours).

Preparation
- Press [DRIVE SELECT] to select the HDD drive.
- Press [INPUT SELECT] to select "AV1", "AV2" or "DV".
- When the output signal from the external equipment is NTSC, change "TV System" to "NTSC" in the Setup menu (➡ 88).

1 While stopped
Press [FUNCTION MENU].

2 **Press [▲, ▼] to select "Others" and press [OK].**

3 **Press [▲, ▼] to select "Flexible Recording via AV input" and press [OK].**

```
Flexible Recording via AV input
  Record in FR mode.
  Maximum recording time
                      8 hour 00 min.

  Set recording time

                    8  Hour  00  Min.   Start   Cancel
  ⊙  OK
      RETURN
```
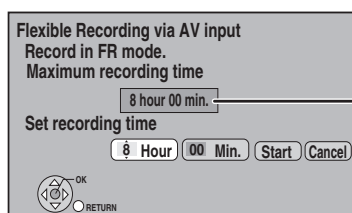
Maximum recording time
This is the maximum recording time in EP (8 hours) mode.

4 **Press [◄, ►] to select "Hour" and "Min." and press [▲, ▼] to set the recording time.**
- You can also set the recording time with the numbered buttons.
- You cannot record more than 8 hours.

5 **Start play on the other equipment.**

6 When you want to start recording
Press [◄, ►] to select "Start" and press [OK].
Recording starts.

To exit the screen without recording
Press [RETURN ⤺].

To stop recording partway
Press [■].

To show the remaining time
Press [STATUS ⓘ].

With Other Equipment

Copying HD Video (AVCHD format)

It is possible to copy the HD video (AVCHD format) recorded on the Panasonic's video camera, etc. to the HDD.

■ From an SD card or Discs

AVCHD (Disc) → HDD
AVCHD (SD card) → HDD

HDD

HDD

1 Insert a disc or card.

e.g., SD

> **SD Card**
> Play Video (AVCHD)
> Copy Video (AVCHD)
> Copy Video (MPEG2)
> Play Pictures (JPEG)
> Copy Pictures (JPEG)
> SD card is inserted.
> OK
> RETURN

• Display items differ depending on what is recorded in each media.

2 Press [▲, ▼] to select "Copy Video (AVCHD)" and press [OK].

3 The confirmation screen appears and press [OK].

4 Press [▲, ▼] to select the title and press [❚❚].

A check mark is displayed. Repeat this step until you select all necessary titles.
• Press [❚❚] again to cancel.
(All the recordings on the same date become a title.)

5 Press [OK].

6 Press [◄, ►] to select "Start" and press [OK].

■ From a video equipment

HDD of Panasonic's video camera, etc. → HDD
• You cannot playback HD Video in the HDD of Panasonic's video camera, etc. with this unit.
You must copy the files to the HDD.
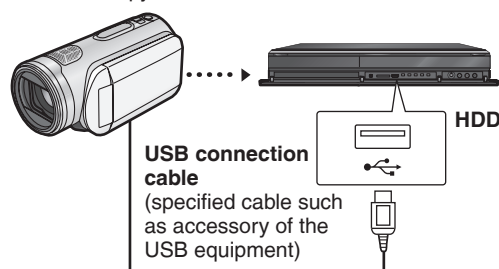
HDD

USB connection cable
(specified cable such as accessory of the USB equipment)

Preparation
Turn on both this unit and the Panasonic's video camera, etc.

1 Connect the Panasonic's video camera, etc. to this unit.

2 Select the appropriate mode that makes the Panasonic's video camera, etc. ready for data transfer (such as "PC CONNECT") on the Panasonic's video camera, etc.

• Refer to the camera's operating instructions for detail.

> **USB device**
> Copy Video (AVCHD)
> Copy Video (MPEG2)
> Play Pictures (JPEG)
> Copy Pictures (JPEG)
> Play / Copy Music (MP3)
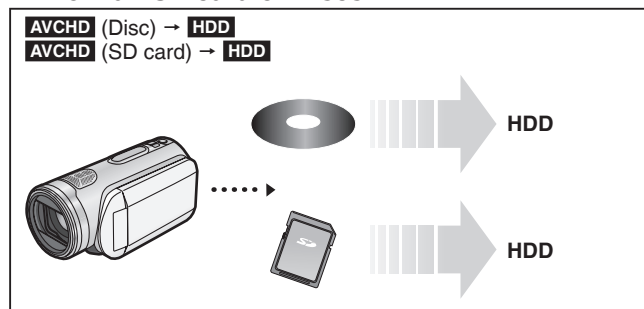> USB device is inserted.
> OK
> RETURN

• Display items differ depending on what is recorded in the USB device.

3 Press [▲, ▼] to select "Copy Video (AVCHD)" and press [OK].

4 The confirmation screen appears and press [OK].

5 Press [▲, ▼] to select the title and press [❚❚].

A check mark is displayed. Repeat this step until you select all necessary titles.
• Press [❚❚] again to cancel.
(All the recordings on the same date become a title.)

6 Press [OK].

7 Press [◄, ►] to select "Start" and press [OK].

To stop copying
Press and hold [RETURN ⤴] for 3 seconds.

Note
• Record, playback or timer recording cannot be executed while copying.
• Copy cannot be executed while recording or playback.
• An AVCHD title with more than 100 scenes will be divided into titles every 99th scene and copied.
• Copied video will be displayed as "AVCHD" in the "Channel" column of the DIRECT NAVIGATOR screen.
• Depending on the recording condition with the high definition camera, scenes recorded on same day might have different titles ("-1", "-2" appended to date).
• See the instructions of the equipment used to record.
• After copying AVCHD to HDD, it can be copied to DVDs with standard definition quality. Therefore, it is not recommended to delete original AVCHD.
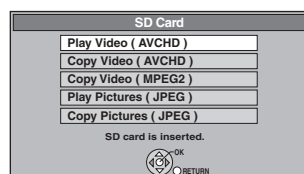
Copying SD Video (MPEG2 format)

It is possible to copy the SD video (MPEG2 format) recorded on the Panasonic's video camera, etc. to the HDD or disc.

■ From an SD card

`SD` → `HDD` `RAM`
(All the recordings on the same date become a title.)

HDD

DVD-RAM

1 Insert a card.

```
            SD Card
   Play Video ( AVCHD )
   Copy Video ( AVCHD )
   Copy Video ( MPEG2 )
   Play Pictures ( JPEG )
   Copy Pictures ( JPEG )
       SD card is inserted.
              OK
             RETURN
```
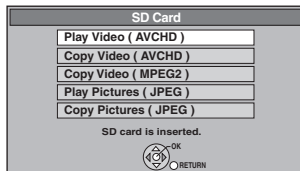
• Display items differ depending on what is recorded in the card.

2 Press [▲, ▼] to select "Copy Video (MPEG2)" and press [OK].

3 Press [▲, ▼] to select "Start Copying", then press [OK].

How to copy
Refer to "Copying using the copying list—Copy" (➡ 50).
Please set the items in steps 3 and 4 as shown below.

Copy Direction:
Source :SD CARD

Copy Mode:
Format :VIDEO

• SD Video on an SD card are automatically registered on the copying list.

4 Press [◀, ▶] to select "Yes" and press [OK] to start copying.

■ From a video equipment

HDD of Panasonic's video camera, etc. → `HDD` `RAM`
(All the recordings on the same date become a title.)

HDD

DVD-RAM

USB connection cable
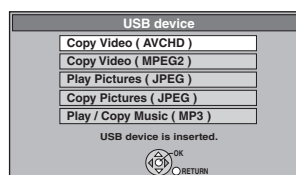(specified cable such as accessory of the USB equipment)

Preparation
Turn on both this unit and the Panasonic's video camera, etc.

1 Connect the Panasonic's video camera, etc. to this unit.

2 Select the appropriate mode that makes the Panasonic's video camera, etc. ready for data transfer (such as "PC CONNECT") on the Panasonic's video camera, etc.

• Refer to the camera's operating instructions for detail.

```
           USB device
   Copy Video ( AVCHD )
   Copy Video ( MPEG2 )
   Play Pictures ( JPEG )
   Copy Pictures ( JPEG )
   Play / Copy Music ( MP3 )
      USB device is inserted.
              OK
             RETURN
```

• Display items differ depending on what is recorded in the USB device.

3 Press [▲, ▼] to select "Copy Video (MPEG2)" and press [OK].

4 Press [▲, ▼] to select "Start Copying", then press [OK].

How to copy
Refer to "Copying using the copying list—Copy" (➡ 50).
Please set the items in steps 3 and 4 as shown below.

Copy Direction:
Source :USB

Copy Mode:
Format :VIDEO

• SD Video on the Panasonic's video camera, etc. are automatically registered on the copying list.

5 Press [◀, ▶] to select "Yes" and press [OK] to start copying.

To stop copying
Press and hold [RETURN ⌅] for 3 seconds.

Note
• You cannot playback SD Video on an SD card or in the HDD of Panasonic's video camera, etc. with this unit. You must copy the files to the HDD or a DVD-RAM.
• You cannot playback or record while copying SD Video.

With Other Equipment

Playing still pictures

HDD RAM -R -R DL CD USB SD
- You can play still pictures recorded with a computer onto a DVD-R, DVD-R DL, CD-R/CD-RW, USB memory and SD card.
- You cannot play still pictures while recording or copying.

Preparation
- RAM -R -R DL CD USB SD Insert a disc, USB memory, or SD card. (➡ 15)
- Press [DRIVE SELECT] to select the drive. Select "DVD" for any discs.

The display below automatically appears when you insert an SD card, USB memory or the discs while stopped.
Press [▲, ▼] to select "Play Pictures (JPEG)" and press [OK]. Then go to step 2 (➡ right).
- -R -R DL CD It will go to step 2 (➡ right) automatically if it is only still pictures that is recorded.

Disc
e.g., CD

CD
Play Video (DivX)
Play Pictures (JPEG)
Play/Copy Music (MP3)
Select file type.
OK RETURN

e.g., USB

USB device
Copy Video (AVCHD)
Copy Video (MPEG2)
Play Pictures (JPEG)
Copy Pictures (JPEG)
Play / Copy Music (MP3)
USB device is inserted.
OK RETURN

e.g., SD

SD Card
Play Video (AVCHD)
Copy Video (AVCHD)
Copy Video (MPEG2)
Play Pictures (JPEG)
Copy Pictures (JPEG)
SD card is inserted.
OK RETURN
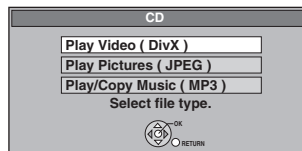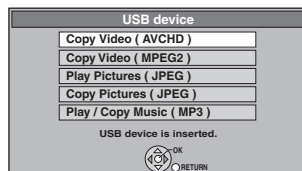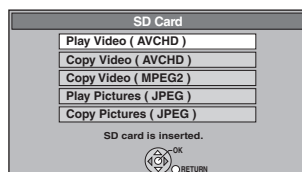
- Display items differ depending on what is recorded in each media.

If the menu screen (➡ above) is not displayed, display it by performing the following operation.

-R -R DL CD USB SD
1 Press [FUNCTION MENU].
2 -R -R DL CD SD
  Press [▲, ▼] to select "Playback" and press [OK].
  USB
  ① Press [▲, ▼] to select "Others" and press [OK].
  ② Press [▲, ▼] to select "USB device" and press [OK].

1 Press [DIRECT NAVIGATOR].

HDD RAM
- When "PICTURE" is not selected, press the "Green" button to select "PICTURE".
- Still pictures copied from SD cards and USB memories are grouped by the shooting date on Pictures by Date screen.

Switching the DIRECT NAVIGATOR appearance
① Press [OPTION].
② Press [▲, ▼] to select "Album View" or "Pictures by Date" and press [OK].
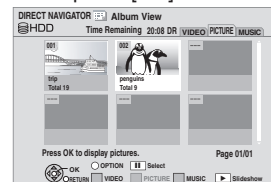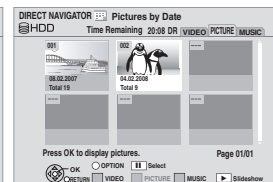
Album View screen   Pictures by Date screen

DIRECT NAVIGATOR screen icons

🔒	Picture and Album protected.
▐	HDD Date that has not yet been viewed (Only still pictures copied with "Copy All Pictures" or "Copy New Pictures")

To show other pages
Press [|◄◄, ►►|].

2 Press [▲, ▼, ◄, ►] to select the album of "Album View" or the date of "Pictures by Date" and press [OK].
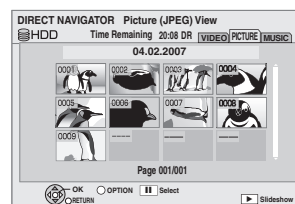
e.g., HDD

3 Press [▲, ▼, ◄, ►] to select the still picture and press [OK].

- Press [◄, ►] to display the previous or next still picture.
- Useful functions during still picture play (➡ 59)

To return to previous screen
Press [RETURN ⏎].

To exit the screen
Press [DIRECT NAVIGATOR].

Useful functions during still picture play

Start Slideshow	You can display still pictures one by one at a constant interval. **1 Press [▲, ▼, ◄, ►] to select the album or date.**[※] **2 Press [►] (PLAY).** You can also start Slideshow with following steps. After performing step 1 (➡ above) ① Press [OPTION]. ② Press [▲, ▼] to select "Start Slideshow" and press [OK]. **To end the slideshow** Press [RETURN ⤺].
Slideshow Settings	**1 Press [▲, ▼, ◄, ►] to select the album or date.**[※] **2 Press [OPTION].** **3 Press [▲, ▼] to select "Slideshow Settings" and press [OK].** **4 After completing the following settings, press [▲, ▼, ◄, ►] to select "Set" and press [OK].** **• To change the display interval** After performing steps 1–3 ① Press [▲, ▼] to select "Display interval". ② Press [◄, ►] to select the desired interval. **• To change the transition effect** After performing steps 1–3 ① Press [▲, ▼] to select "Transition Effect". ② Press [◄, ►] to select the transition effect. "Fade" : Pictures are changed by fading out and fading in. "Motion" : Pictures are changed by fading out and fading in, while it is enlarged, reduced, or moved up or down. "Random": In addition to the "Motion", pictures are changed by various methods. **• To set repeat play** After performing steps 1–3 ① Press [▲, ▼] to select "Repeat Play". ② Press [◄, ►] to select "On" or "Off". **• To playback the music** Sample music in this unit or music stored on the HDD (My Favourites or Playlist) (➡ 67, 69) can be played during the playback of the Slideshow. After performing steps 1–3 e.g., **HDD** ① Press [▲, ▼] to select "Soundtrack". ② Press [◄, ►] to select "On". **• To change the music to playback** After performing steps 1–3 ① Press [▲, ▼] to select "Select Soundtrack" and press [OK]. ② Press [▲, ▼] to select the music playlist and press [OK].
Rotate	**While playing** **1 Press [OPTION].** **2 Press [▲, ▼] to select "Rotate RIGHT" or "Rotate LEFT" and press [OK].** • Rotation information will not be stored in the following cases. – **-R** **-R DL** **CD** **USB** Still pictures – When disc or card is protected – When played on other equipment – When copying pictures – When changing date • If you remove the SD card while the DIRECT NAVIGATOR screen is displayed, picture rotation information may not be properly stored. Remove the SD card after you exit the DIRECT NAVIGATOR screen.
Zoom in Zoom out	**While playing** **1 Press [OPTION].** **2 Press [▲, ▼] to select "Zoom in" and press [OK].** • Press [▲, ▼] to select "Zoom out" in step 2 and press [OK] to resume the display size of the still picture. • When zooming in, the picture may be cut off. • The Zoom in information will not be stored. • This function is only available for small-sized still pictures.
Properties	**Information (e.g., time and date) is shown.** **1 Press [▲, ▼, ◄, ►] to select the album or date and press [OK].**[※] **2 Press [▲, ▼, ◄, ►] to select the still picture.** **3 Press [OPTION].** **4 Press [▲, ▼] to select "Properties" and press [OK].** **While playing** e.g., **HDD** **Press [STATUS ⓘ] twice.** **To exit the picture properties screen** Press [STATUS ⓘ].
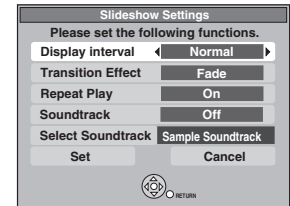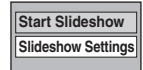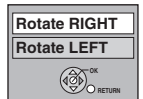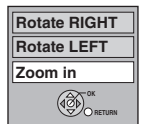
Slideshow Settings

Start Slideshow
Slideshow Settings

Slideshow Settings
Please set the following functions.

Display interval	◄	Normal	►
Transition Effect		Fade	
Repeat Play		On	
Soundtrack		Off	
Select Soundtrack		Sample Soundtrack	
Set		Cancel	

◎ RETURN

Select Soundtrack
Please select music playlist for soundtrack.

Sample Soundtrack
My Favourites
01
02
03

◎ OK ◎ RETURN

Rotate RIGHT
Rotate LEFT

◎ OK ◎ RETURN

Rotate RIGHT
Rotate LEFT
Zoom in

◎ OK ◎ RETURN

2:00:00 01.01.2009
■ Remain HDD 30:30 DR
Folder - Picture No.   103 - 0006
Date   01.01.2009   No.   3 / 9

Shooting date

Still pictures

[※] To switch the "Album View" or "Pictures by Date" (➡ 58, step 1)

Editing still pictures (JPEG)

HDD RAM SD
• Editing can be done in units of pictures, albums or dates.
• You cannot edit still pictures recorded on DVD-R, DVD-R DL, CD-R/CD-RW and USB memory.

Preparation
• Press [DRIVE SELECT] to select the drive.
• RAM SD Release protection (➡ 11, 80, Setting the protection).

1 While stopped
Press [DIRECT NAVIGATOR].

HDD RAM
When "PICTURE" is not selected, press the "Green" button to select "PICTURE".

HDD RAM
Switching the DIRECT NAVIGATOR appearance
① Press [OPTION].
② Press [▲, ▼] to select "Album View" or "Pictures by Date" and press [OK].
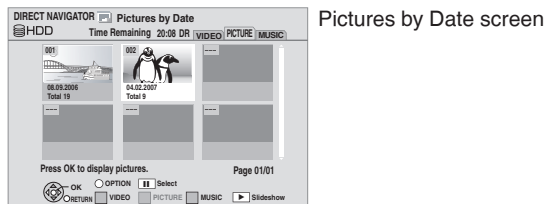
e.g., HDD

Pictures by Date screen

2 Editing an album or date:
Select the album or date to be edited and press [OPTION].

Editing a still picture:
① **Select the album or date which contains the still picture to edit and press [OK].**

e.g., HDD
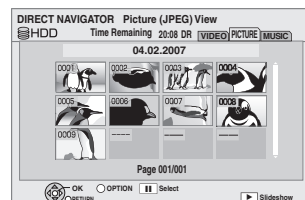
② **Select the still pictures to edit and press [OPTION].**

To show other pages
Press [|◄◄, ►►|].

Multiple editing
Select with [▲, ▼, ◄, ►] and press [❚❚]. (Repeat.)
A check mark appears. Press [❚❚] again to cancel.

3 Press [▲, ▼] to select the operation and press [OK]

(e.g., HDD Pictures by Date)

| Album View |
| Start Slideshow | → Useful functions during still picture play (➡ 59) |
| Slideshow Settings |
| Copy | → Copy to Album / Copy to New Album / Copy to DVD-RAM |
| Change Date |
| Delete |
| VIDEO / MUSIC |

→ Still pictures operation (➡ 61)

(e.g., HDD Album View)

| Pictures by Date |
| Start Slideshow | → Useful functions during still picture play (➡ 59) |
| Slideshow Settings |
| Copy Album | → Copy to Album / Copy to New Album / Copy to DVD-RAM |
| Edit Album | → Enter Album Name / Set up Protection / Cancel Protection |
| Delete Album |
| VIDEO / MUSIC |

→ Still pictures operation (➡ 61)

(e.g., HDD Picture (JPEG) View from Pictures by Date)

| Start Slideshow | → Useful functions during still picture play (➡ 59) |
| Slideshow Settings |
| Properties |
| Copy Pictures | → Copy to Album / Copy to New Album |
| Edit Pictures | → Change Date / Set up Protection / Cancel Protection |
| Delete Pictures |
| Pictures by Date |

→ Still pictures operation (➡ 61)

(e.g., SD Album View)

| Start Slideshow | → Useful functions during still picture play (➡ 59) |
| Slideshow Settings |
| Edit Album | → Enter Album Name / Set up Protection / Cancel Protection |
| Delete Album |

→ Still pictures operation (➡ 61)

(e.g., SD Picture (JPEG) View)

| Start Slideshow | → Useful functions during still picture play (➡ 59) |
| Slideshow Settings |
| Properties |
| Edit Pictures | → Set up Protection / Cancel Protection |
| Delete Pictures |
| Album View |

→ Still pictures operation (➡ 61)

To return to the previous screen
Press [RETURN ⏎].

To exit the screen
Press [DIRECT NAVIGATOR].

Still pictures operation

After performing steps 1–3 (➡ 60)

Copy to Album[※] **HDD** **RAM**	Copy the selected album, date or pictures to an existing album. ① **Press [◀, ▶] to select "Start" and press [OK].** ② **Press [▲, ▼, ◀, ▶] to select the destination album and press [OK].** • The destination album with protect setting cannot be copied to. • After copying, the screen shows the Album View automatically.

Copy to New Album[※]
HDD **RAM**
	Copy the selected album, date or pictures to new album.
	① **Press [◀, ▶] to select "Start" and press [OK].**
	② **Press [OK].**
	③ **Press [◀, ▶] to select "Yes" or "No" and press [OK].**
	• If "Yes" is selected:
	  You can give a name to the album. (➡ 72, Entering text)
	• If "No" is selected:
	  Date of the first recorded picture in the album becomes the album name automatically. (If there is no information about the recording date, it will become "--.--.----".)
	• After copying, the screen shows the Album View automatically.

Copy to DVD-RAM **HDD** Copy to HDD **RAM**	**Press [◀, ▶] to select "Start" and press [OK].**
Change Date[※] **HDD** **RAM** (Pictures by Date only)	Change the date of a folder and move the picture in it into the folder of the changed date. ① **Press [◀, ▶] to select the item and press [▲, ▼] to change.** ② **Press [OK].** • You can also change the date of a picture. • Date folder of the original is maintained even if all original pictures were deleted after changing the date of folder. Delete it if unrequired. • If there is no folder with the changed date, a new folder will be created.
Enter Album Name **HDD** **RAM** **SD** (Album View only)	You can give a name to the album. (➡ 72, Entering text) • Album names input using this unit may not be displayed on other equipment.
Set up Protection[※] Cancel Protection[※] **HDD** **RAM** **SD** (Album View and Picture (JPEG) View only)	If set, this will protect the still picture or album from accidental deletion. **Press [◀, ▶] to select "Yes" and press [OK].** The lock symbol appears when the still picture or album is protected. • Even if the protection setting is used by this unit to protect an album, the album may be deleted by another unit.
Delete[※] Delete Album[※] Delete Pictures[※] **HDD** **RAM** **SD**	**Press [◀, ▶] to select "Delete" and press [OK].** • Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding. • **RAM** **SD** If there is a file other than DCF format or other folder exists in the date or album, only the pictures will be deleted, and the date or the album itself will not be deleted.

[※] Multiple editing (➡ 60) is possible.
[Copy to Album, Copy to New Album, Change Date : Only when the "Picture (JPEG) View" screen is displayed]

Note
• Timer recordings do not start when performing "Copy to Album", "Copy to New Album", "Change Date", "Copy to DVD-RAM" or "Copy to HDD".
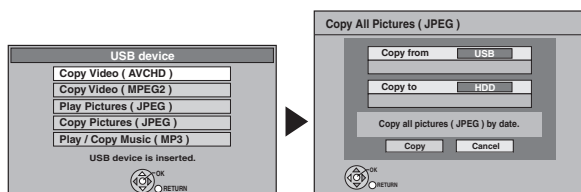
Still pictures

Copying still pictures

HDD RAM USB SD
- Pictures copied from SD card and USB memory will be categorised according to the shooting date. Pictures without shooting date will be categorised using the creation date.
- You cannot copy pictures recorded to DVD-R, DVD-R DL or CD-R/ CD-RW.
- If the space on the destination drive runs out or the number of files/folders to be copied exceeds the maximum (➡ 112), copying will stop partway through.
- You cannot copy the information about the picture rotation.
- Timer recording will not start while copying still pictures.

Copying all the still pictures on the USB memory—Copy All Pictures

USB → HDD

1 While stopped
Insert the USB memory.
The menu is automatically displayed.
- If the menu is not displayed (➡ 58).

```
USB device
  Copy Video ( AVCHD )
  Copy Video ( MPEG2 )
  Play Pictures ( JPEG )
  Copy Pictures ( JPEG )
  Play / Copy Music ( MP3 )
  USB device is inserted.
        OK
        RETURN
```
▶
```
Copy All Pictures ( JPEG )
  Copy from        USB
  Copy to          HDD
  Copy all pictures ( JPEG ) by date.
        Copy       Cancel
        OK
        RETURN
```

- Display items differ depending on what is recorded in the USB memory.

2 Press [▲, ▼] to select "Copy Pictures (JPEG)" and press [OK].

3 Press [◄, ►] to select "Copy" and press [OK].

- ▮ will be displayed on the Pictures by Date screen of the DIRECT NAVIGATOR for the added pictures.

To stop copying
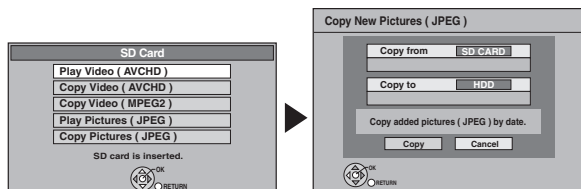Press and hold [RETURN ⤺] for 3 seconds.

Note
- The structure of folders on the USB memory may not be the same at the copy destination.

Copying new still pictures on the SD card—Copy New Pictures

SD → HDD
This unit saves information about imported still pictures. Therefore, if still pictures are imported from the same SD card, then only new still pictures will be imported.

1 While stopped
Insert the SD card.
The menu is automatically displayed.
- If the menu is not displayed (➡ 58).

```
SD Card
  Play Video ( AVCHD )
  Copy Video ( AVCHD )
  Copy Video ( MPEG2 )
  Play Pictures ( JPEG )
  Copy Pictures ( JPEG )
  SD card is inserted.
        OK
        RETURN
```
▶
```
Copy New Pictures ( JPEG )
  Copy from        SD CARD
  Copy to          HDD
  Copy added pictures ( JPEG ) by date.
        Copy       Cancel
        OK
        RETURN
```

- Display items differ depending on what is recorded in the SD card.

2 Press [▲, ▼] to select "Copy Pictures (JPEG)" and press [OK].

3 Press [◄, ►] to select "Copy" and press [OK].
- Protection of the card is
  - Set: Copy will start.
  - Not set: Go to step 4.

4 Press [◄, ►] to select "Copy & Delete" or "Copy Only" and press [OK].
If "Copy & Delete" is selected
Copied pictures in the SD card will be deleted after copying.
If "Copy Only" is selected
Pictures will not be deleted.

- ▮ will be displayed on the Pictures by Date screen of the DIRECT NAVIGATOR for the added pictures.

To stop copying
Press and hold [RETURN ⤺] for 3 seconds.

Note
- This unit saves the information on up to 12,000 still pictures and 30 SD cards. If additional still pictures are imported, then the older information will be deleted.

Copying using the copying list

HDD ⇄ RAM SD
SD ⇄ RAM
USB → HDD RAM

1 While stopped
Press [FUNCTION MENU].

2 Press [▲, ▼] to select "Copy" and press [OK].

```
Copy
    Cancel All
1 Copy Direction        Source        DVD
    DVD → HDD
                        Destination   HDD
2 Copy Mode
    PICTURE High Speed
3 Create List
    0
    Start Copying
    RETURN    Select the copy direction.
```
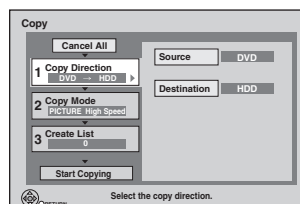
- If you are not going to change the each setting (➡ 63, step 6).

3 Set the copy direction.
- If you are not going to change the copying direction (➡ step 4).
① **Press [▲, ▼] to select "Copy Direction" and press [►].**
② **Press [▲, ▼] to select "Source" and press [OK].**
③ **Press [▲, ▼] to select the drive and press [OK].**
④ **Press [▲, ▼] to select "Destination" and press [OK].**
⑤ **Press [▲, ▼] to select the drive and press [OK].**
   The same drive as the copy source cannot be selected.
⑥ **Press [◄] to confirm.**

4 Set the copy mode.
- If you are not going to change the recording mode (➡ 63, step 5).
① **Press [▲, ▼] to select "Copy Mode" and press [►].**
② **Press [▲, ▼] to select "Format" and press [OK].**
③ **Press [▲, ▼] to select "PICTURE" and press [OK].**
   "Recording Mode" is automatically set to "High Speed".
④ **Press [◄] to confirm.**

5 Register still pictures for copy.

- If you are going to copy a registered list without making any changes to it (➡ step 6).
- Pictures from different dates or albums will not be registered to same list.

```
Copy
        Cancel All
                          Destination Capacity: 4343MB
1  Copy Direction          New Item    By Picture ( Date )
   DVD  →  HDD
                          No.   Size        Title
2  Copy Mode                      New item (Total=0)
   PICTURE  High Speed

3  Create List
          0
          ▼
      Start Copying          Page 01/01
  OK
  RETURN   ○ OPTION   Create copy list.
```
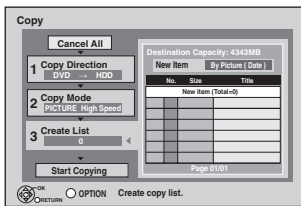
① **Press [▲, ▼] to select "Create List" and press [▶].**
② **Press [▲, ▼] to select "New Item" and press [OK].**

```
Destination Capacity: 4343MB
  New Item      By Picture ( Date )
  No.    Size          Title
         New item (Total=0)




              Page 01/01
```
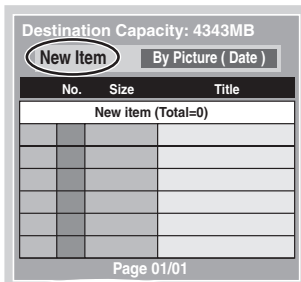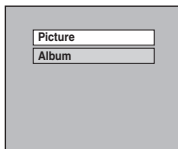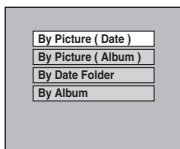
③ **Press [▲, ▼] to select the item and press [OK].**

e.g., **HDD**

```
By Picture ( Date )
By Picture ( Album )
By Date Folder
By Album
```

e.g., **SD**

```
Picture
Album
```

Register with "By Picture (Date/Album)"/"Picture"
1 **Press [▲, ▼] to select "New item" and press [OK].**
2 **Press [▲, ▼, ◄, ►] to select the still picture and press [❙❙].**
   A check mark is displayed. Repeat this step until you select all necessary items.
   - Press [❙❙] again to cancel.
   - Press [I◄◄, ►►I] to show other pages.
   - The items will be copied in the order of the copying list. If you want to specify the order, repeat selecting one item at a time.
   - To select another folder (➡ right)
3 **Press [OK].**
   - To edit the copying list (➡ right)
4 **Press [◄] to confirm.**

Register with "By Date Folder"/"By Album"/"Album"
1 **Press [▲, ▼] to select "New item" and press [OK].**
2 **Press [▲, ▼, ◄, ►] to select the folder and press [❙❙].**
   A check mark is displayed. Repeat this step until you select all necessary items.
   - Press [❙❙] again to cancel.
   - Press [I◄◄, ►►I] to show other pages.
   - The items will be copied in the order of the copying list. If you want to specify the order, repeat selecting one item at a time.
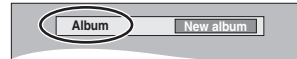3 **Press [OK].**
   - To edit the copying list (➡ right)
4 **Press [◄] to confirm.**

6 Press [▲, ▼] to select "Start Copying" and press [OK].

- [Only when copied with "By Picture (Album)" from **HDD** to **RAM** **SD** or from **RAM** to **HDD** **SD**]
  When specifying another album as the copying destination, select "Album".

```
  Album            New album
```

7 Press [◄, ►] to select "Yes" and press [OK] to start copying.

To return to the previous screen in steps 1 to 7
Press [RETURN ↰].

To stop copying after step 7
Press and hold [RETURN ↰] for 3 seconds.

Note
- The sequence in which the still pictures are registered on the copying list may not be the same at the copy destination.
- If still pictures are already contained inside the copy destination folder, the new still pictures are recorded following the existing still pictures.

■ To edit the copying list
Select the item after step 5–③–3 (➡ left)
① Press [OPTION].
② Press [▲, ▼] to select the operation and press [OK].
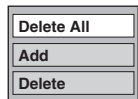
```
Delete All
Add
Delete
```

Delete All:
Delete all items registered on the copying list.
Press [◄, ►] to select "Yes" and press [OK].

Add:
Add new items to the copying list.
1 Press [▲, ▼] to select the item and press [❙❙].
   A check mark is displayed. Repeat this step until you select all necessary items.
   - Press [❙❙] again to cancel.
2 Press [OK].

Delete:
Delete the selected items.
Press [◄, ►] to select "Yes" and press [OK].

To cancel all registered copying settings and lists
After performing steps 1–2 (➡ 62, Copying using the copying list)
3 Press [▲, ▼] to select "Cancel All" and press [OK].
4 Press [◄, ►] to select "Yes" and press [OK].
- The settings and lists may be cancelled in the following situations.
  – When a title or still picture has been recorded or deleted at the copy source
  – When steps have been taken, for instance, to turn off the unit, remove the card, open the tray, change the copy direction, etc.

■ To select another folder
After performing step 5–③–1 [➡ left, Register with "By Picture (Date/Album)"/"Picture"]
① **Press [OPTION].**
② **Press [OK].**
③ **Press [▲, ▼, ◄, ►] to select the folder and press [OK].**
- The still pictures of different folders cannot be registered on the same list.

Still pictures

Deleting still pictures

Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding.

`HDD` `RAM` `SD`

Preparation
- Press [DRIVE SELECT] to select the drive.
- `RAM` `SD` Release protection (➡ 11, 80, Setting the protection).

1   While stopped
Press [FUNCTION MENU].

2   ### Press [▲, ▼] to select "Delete" and press [OK].

`HDD` `RAM`
When "PICTURE" is not selected, press the "Green" button to select "PICTURE".

`HDD` `RAM`
Switching the DIRECT NAVIGATOR appearance
① Press [OPTION].
② Press [▲, ▼] to select "Album View" or "Pictures by Date" and press [OK].
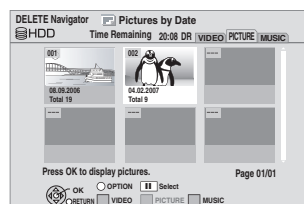
3   ### Deleting a still picture
① **Press [▲, ▼, ◄, ►] to select the album/date folder which contains the still picture to delete, then press [OK].**
② **Press [▲, ▼, ◄, ►] to select the still picture, then press [OK].**

By using the properties in the option menu, you can confirm the item that you have selected. (➡ 60, step 2)

Deleting the album/date folder
① **Press [▲, ▼, ◄, ►] to select the album/date folder you want to delete.**
② **Press [DEL].**

To show other pages
Press [|◄◄, ►►|].

Multiple deleting
Select with [▲, ▼, ◄, ►] and press [❚❚]. (Repeat.)
A check mark appears. Press [❚❚] again to cancel.

4   ### Press [◄, ►] to select "Delete" and press [OK].
The item is deleted.

To return to the previous screen
Press [RETURN ⏎].

To exit the screen
Press [EXIT].

Playing music

Playing MP3 files

`-R` `-R DL` `CD` `USB`

You can play MP3 files recorded with a computer onto a DVD-R, DVD-R DL, CD-R/CD-RW and USB memory.
• You cannot play MP3 files on the USB memory while recording.

1 While stopped
Insert a disc or USB memory.

CD
Play Video (DivX)
Play Pictures (JPEG)
Play/Copy Music (MP3)
Select file type.

USB device
Copy Video (AVCHD)
Copy Video (MPEG2)
Play Pictures (JPEG)
Copy Pictures (JPEG)
Play / Copy Music (MP3)
USB device is inserted.

• Display items differ depending on what is recorded in each media.
• `-R` `-R DL` `CD` Playback will automatically start if only MP3 is recorded.

2 Press [▲, ▼] to select "Play/Copy Music (MP3)" and press [OK].
• Playback will automatically start.

e.g., `CD`

DIRECT NAVIGATOR Music List ▶ 0.09
CD (MP3) March Moon
Folder: Mexican pops

Playing track

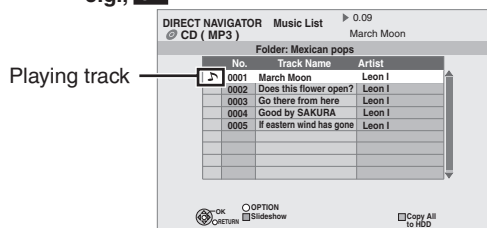| No.	Track Name	Artist
0001	March Moon	Leon I
0002	Does this flower open?	Leon I
0003	Go there from here	Leon I
0004	Good by SAKURA	Leon I
0005	If eastern wind has gone	Leon I

OK OPTION
RETURN Slideshow Copy All to HDD

Playing different track
Press [▲, ▼] to select the track and press [OK].

To exit the screen
Press [EXIT].
Playback of track will stop.

If the menu screen (➡ above) is not displayed, display it by performing the following operation.

1 Press [FUNCTION MENU].
2 `-R` `-R DL` `CD`
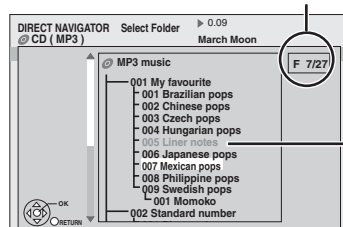Press [▲, ▼] to select "Playback" and press [OK].

`USB`
① Press [▲, ▼] to select "Others" and press [OK].
② Press [▲, ▼] to select "USB device" and press [OK].

Using the tree screen to find a folder

1 **While the Music List is displayed**
Press [OPTION].
2 **Press [▲, ▼] to select "Select Folder", and press [OK].**

Selected folder No. /Total folders
If the folder has no track, "– –" is displayed as folder number.

DIRECT NAVIGATOR Select Folder ▶ 0.09
CD (MP3) March Moon

MP3 music F 7/27
001 My favourite
001 Brazilian pops
002 Chinese pops
003 Czech pops
004 Hungarian pops
005 Liner notes
006 Japanese pops
007 Mexican pops
008 Philippine pops
009 Swedish pops
001 Momoko
002 Standard number

OK
RETURN

You cannot select folders that contain no compatible files.

3 **Press [▲, ▼, ◄, ►] to select a folder and press [OK].**
The Music List for the folder appears.

To return to the previous screen
Press [RETURN ⤺].

Note
When this unit is not operated for approximately 5 minutes during music playback, the screen saver is displayed [only when "Screen Saver" in the Setup menu is set to "On" (➡ 88)]. To return to the previous screen, press [RETURN ⤺].

Playing music CD

While stopped

Insert a music CD.
The unit starts accessing the Gracenote® Database (➡ 70) and searches for the title information.

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gracenote.

If search results indicate that multiple titles were found
Press [▲, ▼] to select the appropriate title and press [OK].

• Playback will automatically start.

DIRECT NAVIGATOR Music List ▶ 0.09 4.30
CD March Moon
Does this flower open?

Playing track

No.	Track Name	Artist
01	March Moon	Leon I
02	Does this flower open?	Leon I
03	Go there from here	Leon I
04	Good by SAKURA	Leon I
05	If eastern wind has gone	Leon I

OK OPTION
RETURN Slideshow Retry access Copy All to HDD

Playing different track
Press [▲, ▼] to select the track and press [OK].

Reacquire the CD title
Press the "Yellow" button.

To exit the screen
Press [DIRECT NAVIGATOR].
Playback of track will stop.

Note
When this unit is not operated for approximately 5 minutes during music playback, the screen saver is displayed [only when "Screen Saver" in the Setup menu is set to "On" (➡ 88)]. To return to the previous screen, press [RETURN ⤺].
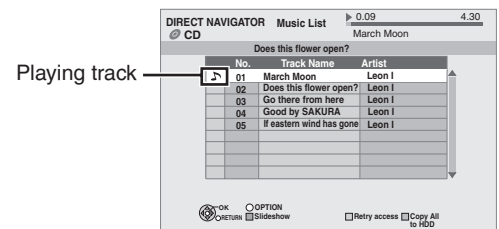
Playing music recorded on HDD
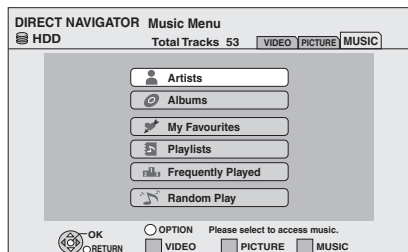
Copying music to HDD (➜ 70)

Preparation
Press [DRIVE SELECT] to select the HDD drive.

1 While stopped

Press [DIRECT NAVIGATOR].
When "MUSIC" is not selected, press the "Yellow" button to select "MUSIC".

```
DIRECT NAVIGATOR   Music Menu
🖴 HDD                 Total Tracks  53    [VIDEO][PICTURE][MUSIC]

                    👤  Artists
                    💿  Albums
                    🎯  My Favourites
                    📑  Playlists
                    📊  Frequently Played
                    🎵  Random Play

      OK          ○ OPTION    Please select to access music.
      RETURN        [ ] VIDEO   [ ] PICTURE   [ ] MUSIC
```

2 Press [▲, ▼] to select the item and press [OK].

```
    👤  Artists ─────────────── ❶
    💿  Albums ─────────────── ❷
    🎯  My Favourites ────────── ❸
    📑  Playlists ─────────────── ❹
    📊  Frequently Played ─────── ❺
    🎵  Random Play ──────────── ❻
```

❶ **Categorise by artist**
❷ **Categorise by album**
❸ **Tracks registered in "My Favourites"**
❹ **Tracks registered in "Playlists"**
❺ **Tracks played most within 200 tracks played recently (up to 30 tracks)**
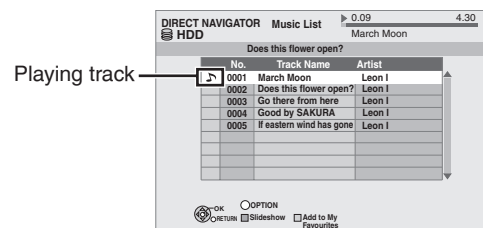❻ **Random playback of all tracks**

■ When "Artists" is selected
① Press [◄, ►] to select the initial of the artist.
② Press [▲, ▼] to select the name of the artist, and press [OK].
③ Press [▲, ▼] to select the album, and press [OK].

■ When "Albums" is selected
① Press [◄, ►] to select the initial of the album.
② Press [▲, ▼] to select the album, and press [OK].

3 Press [▲, ▼] to select the track and press [OK].

```
DIRECT NAVIGATOR   Music List    ▶ 0.09          4.30
🖴 HDD                             March Moon
                Does this flower open?
Playing track ──  No.   Track Name           Artist
              🎵 0001   March Moon           Leon I
                 0002   Does this flower open? Leon I
                 0003   Go there from here   Leon I
                 0004   Good by SAKURA       Leon I
                 0005   If eastern wind has gone Leon I

       OK      ○OPTION
       RETURN  [ ]Slideshow  [ ]Add to My
                                 Favourites
```

Playing different track
Press [▲, ▼] to select the track and press [OK].

To return to the previous screen
Press [RETURN ⏎].

To exit the screen
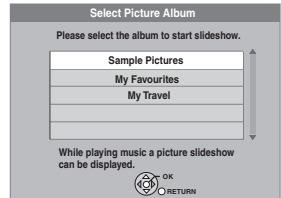Press [DIRECT NAVIGATOR].
Playback of track will stop.

Note
- You cannot play music tracks on HDD while copying.
- When this unit is not operated for approximately 5 minutes during music playback, the screen saver is displayed [only when "Screen Saver" in the Setup menu is set to "On" (➜ 88)]. To return to the previous screen, press [RETURN ⏎].

Useful functions during music play

`HDD` `-R` `-R DL` `CD` `USB`
Operations during play

Stop	**Press [■].**
Pause	**Press [❚❚].** Press [❚❚] again or [▶] (PLAY) to restart play.
Search	**Press [◀◀] or [▶▶].** Press [▶] (PLAY) to restart play.
Skip	During play or while paused **Press [◀◀] or [▶▶❘].** Skip to the track you want to play. • Each press increases the number of skips.
Register a track to "My Favourites" `HDD`	While Music List screen is displayed **Press [▲, ▼] to select the track and press the "Green" button.** • Up to 99 tracks can be registered.
Properties `HDD`	While Music List screen is displayed 1 **Press [▲, ▼] to select title.** 2 **Press [OPTION].** 3 **Press [▲, ▼] to select "Properties" and press [OK].** • To exit the Properties screen, press [OK].

Repeat Play
Random
	1 **Press [DISPLAY].**
	2 **Press [▲, ▼] to select "Play" and press [▶].**
	3 **Press [▲, ▼] to select "Repeat Play" or "Random" and press [▶].**
	4 **Press [▲, ▼] to select the item.**
	
	• Repeat Play
	  "All": Repeatedly playback the selected album, etc.
	  "Track": Repeatedly playback the selected track
	  "Off"
	• Random
	  "On": Randomly playback the selected album, etc.
	  "Off"

Re-master	This feature gives you a more natural sound by adding higher frequency signals not recorded on the track. 1 **Press [DISPLAY].** 2 **Press [▲, ▼] to select "Sound" and press [▶].** 3 **Press [▲, ▼] to select "Sound Effects" and press [▶].** 4 **Press [▲, ▼] to select "Re-master1" or "Re-master2".** • This function is effective for audio from the HDMI terminal or the DIGITAL AUDIO OUT terminal only when "Dolby Digital", "DTS", "MPEG" or "HE-AAC" is set to "PCM". (However, in this case, audio is output as 2 ch from the DIGITAL AUDIO OUT terminal.)
Display Still Pictures (Slideshow)	Sample pictures in this unit or pictures stored on "Album View" of the HDD can be played back as slideshow during playback of the music. While playing the music **Press the "Red" button.** **Change the pictures to display** 1 Press [OPTION]. 2 Press [▲, ▼] to select "Select Picture Album" and press [OK]. 3 Press [▲, ▼] to select the album and press [OK]. **To end the slideshow** Press [RETURN ⤴]. • It will also end when the music is stopped.
Playing music continuously even after turning off power to the television	When the unit is connected to a Panasonic TV (VIERA) that supports HDAVI Control 2 or later and the unit is turned off if the power to the television is turned off, since "Power off link" (➡ 74) operates. The following operations make it possible to keep the power of the unit ON and to play music continuously. ① While playing music **Press [OPTION].** ② **Press [▲, ▼] to select "TV Power Off" and press [OK].** • Sound may be discontinued for several seconds when the power to the television is turned off. • If the operation mentioned above is executed while audio is output from the television, the sound may not be output from the amplifier/receiver. It is recommended to set the amplifier/receiver beforehand so that audio will be output from the amplifier/receiver.

Select Picture Album
Please select the album to start slideshow.
Sample Pictures
My Favourites
My Travel
While playing music a picture slideshow can be displayed.
OK
RETURN

Music

Editing music

HDD

Preparation
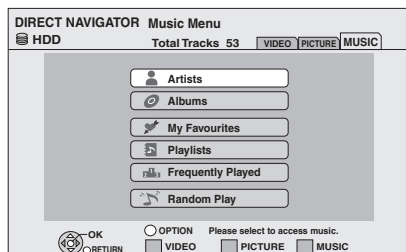Press [DRIVE SELECT] to select the HDD drive.

1 While stopped

Press [DIRECT NAVIGATOR].

When "MUSIC" is not selected, press the "Yellow" button to select "MUSIC".

- When doing "Delete All Tracks", "Clear My Favourites" or "Clear Frequently Played" (➡ go to step 3)

```
DIRECT NAVIGATOR   Music Menu
   HDD              Total Tracks 53      VIDEO  PICTURE  MUSIC

                       Artists
                       Albums
                       My Favourites
                       Playlists
                       Frequently Played
                       Random Play

          OK         OPTION   Please select to access music.
          RETURN     VIDEO        PICTURE      MUSIC
```

2 Press [▲, ▼] to select item and press [OK].

■ When "Artists" is selected
① Press [◄, ►] to select the initial of the artist.
② Press [▲, ▼] to select the name of the artist, and press [OK].
③ Press [▲, ▼] to select the album.
- To edit the track, press [OK], and select the track with [▲, ▼].

■ When "Albums" is selected
① Press [◄, ►] to select the initial of the album.
② Press [▲, ▼] to select the album.
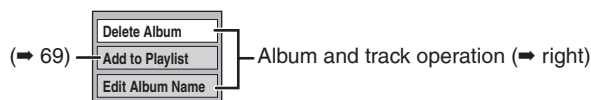- To edit the track, press [OK], and select the track with [▲, ▼].
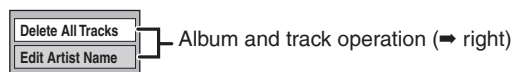
3 Press [OPTION].
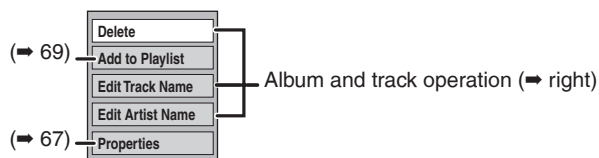
4 Press [▲, ▼] to select item and press [OK].

e.g., while selecting album

(➡ 69)
```
Delete Album
Add to Playlist      ─ Album and track operation (➡ right)
Edit Album Name
```

e.g., while selecting artist

```
Delete All Tracks    ─ Album and track operation (➡ right)
Edit Artist Name
```

e.g., while selecting track

(➡ 69)
```
Delete
Add to Playlist
Edit Track Name      ─ Album and track operation (➡ right)
Edit Artist Name
```
(➡ 67) — Properties

To return to the previous screen
Press [RETURN ⏎].

To exit the screen
Press [DIRECT NAVIGATOR].

Album and track operation

After performing steps 1–4 (➡ left)

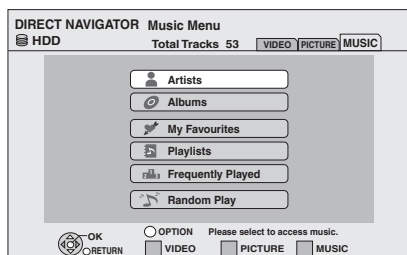|	
Delete All Tracks • While displaying Music Menu screen	Delete all tracks in the HDD. ① **Press [◄, ►] to select "Yes" and press [OK].** ② **Press [◄, ►] to select "Delete" and press [OK].** • **Once deleted, the recorded contents are lost and cannot be restored.** Make certain before proceeding.
Delete All Tracks • While displaying "Artists" screen **Delete Album** • While displaying "Albums" screen **Delete**	All tracks in the selected Artist or Album are deleted in case of "Delete All Tracks" or "Delete Album". **Press [◄, ►] to select "Delete" and press [OK].** • **Once deleted, the recorded contents are lost and cannot be restored.** Make certain before proceeding.
Edit Album Name **Edit Track Name** **Edit Artist Name**	(➡ 72, Entering text)
Clear My Favourites • While displaying Music Menu screen	Remove all tracks in "My Favourites". Tracks themselves are not deleted from the HDD. **Press [◄, ►] to select "Clear" and press [OK].**
Clear Frequently Played • While displaying Music Menu screen	Remove all tracks in "Frequently Played". Tracks themselves are not deleted from the HDD. **Press [◄, ►] to select "Clear" and press [OK].**
Remove • While displaying "My Favourites" or "Frequently Played" screen	Selected track is removed. Track itself is not deleted from the HDD. **Press [◄, ►] to select "Remove" and press [OK].**

Register track to Playlist

`HDD`

You can register your favourite albums and tracks into 10 preset playlists.
- Name of the playlist can be changed.
- New playlist cannot be added.
- Up to 999 tracks can be registered to each playlist.

Preparation
Press [DRIVE SELECT] to select the HDD drive.

1 **While stopped**
Press [DIRECT NAVIGATOR].
When "MUSIC" is not selected, press the "Yellow" button to select "MUSIC".

```
DIRECT NAVIGATOR  Music Menu
📼 HDD              Total Tracks  53    VIDEO  PICTURE  MUSIC

              👤  Artists
              💿  Albums
              🎵  My Favourites
              🔁  Playlists
              📊  Frequently Played
              🎵  Random Play

    OK          ◯ OPTION   Please select to access music.
    ◯ RETURN    ▢ VIDEO   ▢ PICTURE   ▢ MUSIC
```

2 **Press [▲, ▼] to select item and press [OK].**

■ **When "Artists" is selected**
① Press [◄, ►] to select the initial of the artist.
② Press [▲, ▼] to select the name of the artist, and press [OK].
③ Press [▲, ▼] to select the album.
- To register the track, press [OK], and select the track with [▲, ▼].

■ **When "Albums" is selected**
① Press [◄, ►] to select the initial of the album.
② Press [▲, ▼] to select the album.
- To register the track, press [OK], and select the track with [▲, ▼].

3 **Press [OPTION].**

4 **Press [▲, ▼] to select "Add to Playlist" and press [OK].**

5 **Press [▲, ▼] to select the playlist to register, and press [OK].**

```
DIRECT NAVIGATOR     Playlists
📼 HDD

                  Playlist Name
          My Favourites
          Playlist 01
          Playlist 02
          Playlist 03
          Playlist 04
          Playlist 05
          Playlist 06
          Playlist 07
          Playlist 08
          Playlist 09
    OK          Please select playlist to add to.
    ◯ RETURN
```

To return to the previous screen
Press [RETURN ⇆].

To exit the screen
Press [DIRECT NAVIGATOR].

Editing Playlist

`HDD`

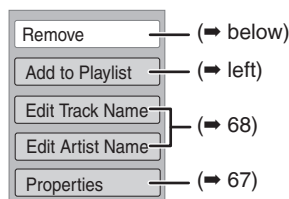**Preparation**
Press [DRIVE SELECT] to select the HDD drive.

1 **While stopped**
Press [DIRECT NAVIGATOR].
When "MUSIC" is not selected, press the "Yellow" button to select "MUSIC".

2 **Press [▲, ▼] to select "Playlists" and press [OK].**

3 **Edit the track in the playlist**
① Press [▲, ▼] to select the playlist and press [OK].
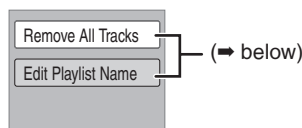② Press [▲, ▼] to select the track and press [OPTION].

e.g., while selecting the track in playlist

```
Remove            ── (➡ below)
Add to Playlist   ── (➡ left)
Edit Track Name ┐
Edit Artist Name ┘── (➡ 68)
Properties        ── (➡ 67)
```

Edit the playlist
Press [▲, ▼] to select the playlist and press [OPTION].

e.g., while selecting playlist

```
Remove All Tracks ┐
                  ├── (➡ below)
Edit Playlist Name┘
```

4 **Press [▲, ▼] to select item and press [OK].**

To return to the previous screen
Press [RETURN ⇆].

To exit the screen
Press [DIRECT NAVIGATOR].

Playlist operation

After performing steps 1–4 (➡ above, Editing Playlist)

Remove All Tracks	Remove all tracks in the selected playlist. Tracks themselves are not deleted from the HDD. **Press [◄, ►] to select "Remove" and press [OK].**
Remove	Selected track is removed. Track itself is not deleted from the HDD. **Press [◄, ►] to select "Remove" and press [OK].**
Edit Playlist Name	(➡ 72, Entering text)

Copying music to HDD

You can store the two formats of music data in this unit's HDD.

Music CD (CD-DA)
When inserting music CDs, this unit makes access to the internal Gracenote® Database to obtain title information. The album name, track name and artist name are assigned automatically allowing you find the track easily when playing back.

MP3
You can copy MP3 files from the DVD-R, DVD-R DL, CD or USB memory.
The track name and artist name will be displayed on this unit if the information is contained in ID3 tag of the MP3 file.

About the Gracenote® Database

The Gracenote® Database is a database used to search and retrieve music CD title information.
When a music CD is inserted, the unit will automatically search for and obtain information about the inserted music CD.
The Gracenote® Database comes pre-installed on this unit, so titles and artist information can be obtained. This unit has an internal database containing information for approximately 350,000 album titles.
If the title of the newly released music CD is not in the built-in database, it is possible to acquire the title automatically by connecting to the network via the Internet. (➡ 98)

If there are music CDs with very similar title information, then the incorrect title information may be obtained. If no title suggestions are found, it is displayed as "Unknown Artist", "Unknown Album". In these cases, enter the music CD title information manually, after recording to the HDD has completed.

Copying music from a disc or a USB memory

`-R` `-R DL` `CD` `USB` → `HDD`
- `CD` (Music CD): All tracks in the CD will be recorded.
- `-R` `-R DL` `CD` `USB` (MP3) : All tracks in the folder will be recorded. (Cannot record track-by-track.)

- It will be recorded as 1 album to the HDD in 1 recording.
- **Audio quality**
  `CD` (Music CD): LPCM,
  `-R` `-R DL` `CD` `USB` (MP3): MP3
- The maximum number of tracks on HDD: 40000
  (Depends on the remaining capacity.)
  If titles or pictures are recorded, then the number of albums that can be recorded will be reduced.

1 While stopped

Insert a disc or USB memory.
`CD` (Music CD)
The unit starts accessing the Gracenote® Database and searches for the title information.

POWERED BY

gracenote.

If search results indicate that multiple titles were found
Press [▲, ▼] to select the appropriate title and press [OK].

`-R` `-R DL` `CD` `USB` (MP3)
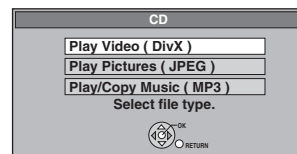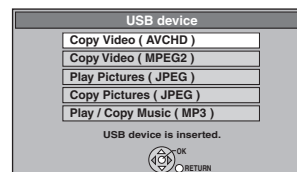**The menu is automatically displayed.**
Press [▲, ▼] to select "Play/Copy Music (MP3)" and press [OK].
- `-R` `-R DL` `CD` (MP3) It will go to step 2 automatically if it is only MP3 that is recorded.
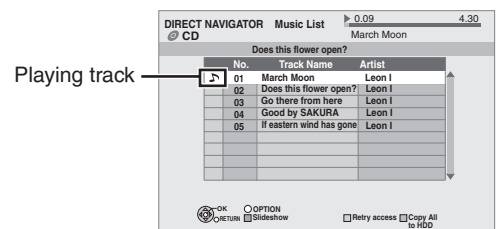
e.g., `CD` (MP3)

CD
Play Video (DivX)
Play Pictures (JPEG)
Play/Copy Music (MP3)
Select file type.

e.g., `USB`

USB device
Copy Video (AVCHD)
Copy Video (MPEG2)
Play Pictures (JPEG)
Copy Pictures (JPEG)
Play / Copy Music (MP3)
USB device is inserted.

- Display items differ depending on what is recorded in each media.

2 ## Press the "Blue" button.
e.g., `CD` (Music CD)

Playing track

DIRECT NAVIGATOR Music List
CD   ▶ 0.09   4.30
                                   March Moon
Does this flower open?

No.	Track Name	Artist
01	March Moon	Leon I
02	Does this flower open?	Leon I
03	Go there from here	Leon I
04	Good by SAKURA	Leon I
05	If eastern wind has gone	Leon I

OK OPTION
RETURN Slideshow   Retry access Copy All to HDD

3 ## Press [◀, ▶] to select "Copy" and press [OK].
Recording starts.

To return to the previous screen in steps 1 to 3
Press [RETURN ⇆].

To stop recording after step 3
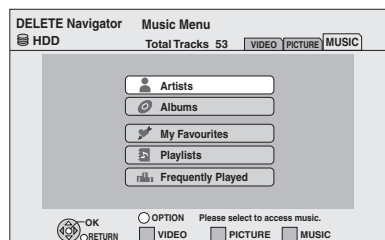Press and hold [RETURN ⇆] for 3 seconds.

Note
- While recording, no other operations can be performed. Timer recordings will not proceed.
- Tracks recorded on the HDD cannot be transferred to a disc, USB memory or SD card.
- CDs which have SCMS (Serial Copy Management System) restrictions cannot be recorded to the HDD.

Deleting music **HDD**

Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding.

1 **While stopped**
Press [FUNCTION MENU].

2 **Press [▲, ▼] to select "Delete" and press [OK].**

When "MUSIC" is not selected, press the "Yellow" button to select "MUSIC".

```
DELETE Navigator   Music Menu
🖴 HDD              Total Tracks 53   VIDEO PICTURE MUSIC

              👤 Artists
              💿 Albums
              🎵 My Favourites
              🗂 Playlists
              📊 Frequently Played

   OK                ○ OPTION   Please select to access music.
   ○RETURN           ■ VIDEO      ■ PICTURE   ■ MUSIC
```

3 **Deleting an artist/album (music)**
① **Press [▲, ▼] to select "Artists" or "Albums" and press [OK].**
② **Press [▲, ▼, ◄, ►] to select the item and press [DEL].**

Deleting a track
① **Press [▲, ▼] to select "Artists" or "Albums" and press [OK].**
② **Press [▲, ▼, ◄, ►] to select the item and press [OK].**
③ **Press [▲, ▼] to select the track and press [OK].**

By using the properties in the option menu, you can confirm the item that you have selected. (➡ 68, step 3)

Removing the music
① **Press [▲, ▼] to select "My Favourites", "Playlists" or "Frequently Played" and press [OK].**
② **Press [▲, ▼] to select the track and press [OK].**
③ **Press [◄, ►] to select "Remove" and press [OK].**
• Remove is executed. (There is no need to proceed to step 4.)
• Track itself is not deleted from the HDD.

4 **Press [◄, ►] to select "Delete" and press [OK].**

The item is deleted.

To return to the previous screen
Press [RETURN ↩].

To exit the screen
Press [EXIT].

Music

HDD RAM -R -R DL -RW(V) +R +R DL +RW SD

You can give names to recorded titles, etc.

The maximum number of characters:

HDD RAM	Characters
Title (HDD RAM)	64 (44*)
Album of still pictures (HDD RAM)	36
Album (Music) (HDD)	59
Track (HDD)	59
Artist (HDD)	39
Playlist (Music) (HDD)	59
Disc (RAM)	64

*Title name for timer recording (HDD)

-R -R DL -RW(V) +R +R DL +RW	Characters
Title	44
Disc	40

SD	Characters
Album of still pictures	36

Note

If a name is long, parts of it may not be shown in some screens.

1 Show Enter Title Name screen.

Title (timer recording) (HDD)
Select "Programme Name" in step 3 on page 23.

Title
Select "Enter Title Name" in step 4 on page 42.

Disc
Select "Disc Name" in step 1 of "Providing a name for a disc" on page 80.

Album of still pictures (HDD RAM SD)
Select "Enter Album Name" in step 3 of "Editing still pictures (JPEG)" on page 60.

Album (Music) (HDD)
Select "Edit Album Name" in step 4 of "Editing music" on page 68.

Track (HDD)
Select "Edit Track Name" in step 4 of "Editing music" on page 68.

Artist (HDD)
Select "Edit Artist Name" in step 4 of "Editing music" on page 68.

Playlist (Music) (HDD)
Select "Edit Playlist Name" in step 4 of "Editing Playlist" on page 69.

e.g., Entering a title name for a title on -R
Name field: shows the text you have entered
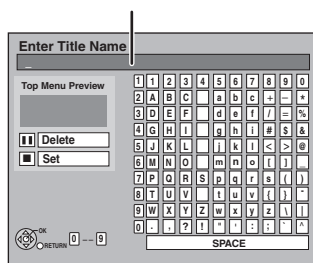
2 Press [▲, ▼, ◄, ►] to select a character and press [OK].

Repeat this step to enter other characters.
- **To delete a character**
  Press [▲, ▼, ◄, ►] to select the character in the name field and press [❙❙]. (The selected characters are deleted.)
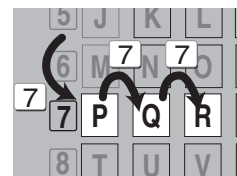- **Using the numbered buttons to enter characters**

e.g., entering the letter "R"
① Press [7] to move to the 7th row.
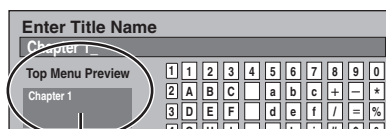② Press [7] twice to highlight "R".
③ Press [OK].

3 Press [■] (Set).

"Writing..." appears then the screen returns to the Title view screen and so on.

To end partway
Press [RETURN ⤺].
Text is not added.

For your reference
If you enter a long name, only part of it is shown in the Top Menu after finalisation or creating Top Menu (➡ 82). When entering a title name, the name that will appear in the Top Menu can be previewed in "Top Menu Preview" window.

Enjoying VIERA CAST™

You can access a selection of Internet services from the Home screen with VIERA CAST, for example, YouTube, Picasa Web Albums. (Current as of June 2009)
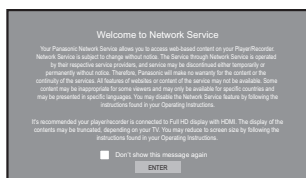• VIERA CAST requires a broadband Internet connection. Dial-up Internet connections cannot be used.

Preparation
• Network connection (➡ 98)
• Network setting (➡ 92)

1 Press [VIERA CAST].

Message is displayed. Please read these instructions carefully and then press [OK] to start VIERA CAST function.

Welcome to Network Service

Your Panasonic Network Service allows you to access web-based content on your Player/Recorder. Network Service is subject to change without notice. The Service through Network Service is operated by their respective service providers, and service may be discontinued either temporarily or permanently without notice. Therefore, Panasonic will make no warranty for the content or the continuity of the services. All features of websites or content of the service may not be available. Some content may be inappropriate for some viewers and may only be available for specific countries and may be presented in specific languages. You may disable the Network Service feature by following the instructions found in your Operating Instructions.

It's recommended your player/recorder is connected to Full HD display with HDMI. The display of the contents may be truncated, depending on your TV. You may reduce to screen size by following the instructions found in your Operating Instructions.

☐ Don't show this message again
ENTER

Images are for illustration purpose, message may change without notice.

2 Press [▲, ▼, ◀, ▶] to select the item and press [OK].

• You can operate VIERA CAST using the following buttons on the unit's remote control. [▲, ▼, ◀, ▶], [OK], [RETURN ⏎], coloured buttons and numbered buttons
• To access more features on YouTube or Picasa Web Albums site, enter your user ID and password that you have previously set up with these sites through the Internet on your PC. However, not all features may be accessible through VIERA CAST.

VIERA CAST Home screen;
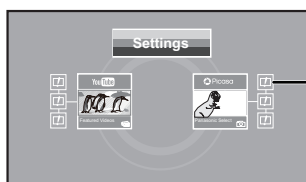
After you access YouTube or Picasa Web Albums from the VIERA CAST Home screen and add your favourite videos or albums to VIERA CAST, you can choose them easily from the Home screen.

Images are for illustration and change without notice.

Regarding "Settings"
Set VIERA CAST Home screen.
• **My Account:** You can remove your account from the unit.
• **Lock:** Enter a password to lock YouTube and Picasa Web Albums.

• **Notices**

To return to VIERA CAST Home screen
Press [VIERA CAST].

To exit
Press [EXIT].

• Set "Network Lock" to "On" to restrict using VIERA CAST. (➡ 89)
• Set "Automatic Volume Control" to "Off" when the audio is warped while using VIERA CAST. (➡ 93)
• When display of the contents is truncated, set "Picture Zoom" to "Out". (➡ 93)
• Set "Daylight Saving Time" when wrong time is displayed on the screen. (➡ 90)

• VIERA CAST™ Home screen is subject to change without notice.
• The services through VIERA CAST™ are operated by their respective service providers, and service may be discontinued either temporarily or permanently without notice. Therefore, Panasonic will make no warranty for the content or the continuity of the services.
• All features of websites or content of the service may not be available.
• Some content may be inappropriate for some viewers.
• Some content may be only available for specific countries and may be presented in specific languages.
• Depending on the usage conditions, it may take a while to read all the data.
• The connection to the Internet may take time or the Internet may not be connected depending on the connection environment.
• The unit is connected to the Internet when VIERA CAST is used, generating communication charges.
• If timer recording starts, VIERA CAST will stop.

Linked operations with the TV (VIERA Link "HDAVI Control™")

You can enjoy linked operations with the TV and receiver by using "HDAVI Control".

What is VIERA Link "HDAVI Control"?
VIERA Link "HDAVI Control" is a convenient function that offers linked operations of this unit, and a Panasonic TV (VIERA) or receiver under "HDAVI Control". You can use this function by connecting the equipment with the HDMI cable. See the operating instructions for connected equipment for operational details. • VIERA Link "HDAVI Control", based on the control functions provided by HDMI which is an industry standard known as HDMI CEC (Consumer Electronics Control), is a unique function that we have developed and added. As such, its operation with other manufacturers' equipment that supports HDMI CEC cannot be guaranteed. • **This unit supports "HDAVI Control 4" function.**   "HDAVI Control 4" is the newest standard (current as of December, 2008) for Panasonic's HDAVI Control compatible equipment. This standard is compatible with Panasonic's conventional HDAVI equipment. • Please refer to individual manuals for other manufacturers' equipment supporting VIERA Link function.

Preparation
1 Connect this unit to your TV using an HDMI cable (➡ 17) or to your receiver using an HDMI cable (➡ 96).
2 Set "VIERA Link" to "On" (➡ 89). (The default setting is "On".)
3 Set the "HDAVI Control" operations on the connected equipment (e.g., TV).
   • **Set the input channel on VIERA to suit the terminal to be used as "HDAVI Control".**
4 Turn on all "HDAVI Control" compatible equipment and select this unit's input channel on the connected TV so that the "HDAVI Control" function works properly.
   Also when the connection or settings are changed, repeat this procedure.

What you can do with "HDAVI Control"

Download from TV[1]

When you connect the unit to a TV for the first time, the station list data is automatically copied from the TV to the unit and the TV stations are assigned to the programme positions on the unit in the same order as on the TV (➡ 18).

Easy playback

When the TV is on and the following operations are performed, the TV's input will automatically switch to HDMI input mode and the TV displays the corresponding action.
(Picture or sound may not be available for the first few seconds.)

Press [FUNCTION MENU][2], [▶] (PLAY)[3], [DIRECT NAVIGATOR], [GUIDE], [PROG/CHECK] etc.

Power on link

When the TV is off and the following operations are performed, the TV will automatically turn on and displays the corresponding action.
(Picture or sound may not be available for the first few seconds.)

Press [FUNCTION MENU][2], [▶] (PLAY)[3], [DIRECT NAVIGATOR], [GUIDE], [PROG/CHECK] etc.

• DVD-V CD
   The TV is automatically turned on when you insert the discs.

Power off link

When you set the TV to standby mode, the unit is also automatically set to standby mode. The unit is automatically set to standby mode even if the FUNCTION MENU screen etc. is displayed, during playback or when the unit set to a timer recording.
Even if the TV is set to standby mode, the unit will not be set to standby mode at the same time when recording, copying, finalising etc.
• When this unit is connected to an "HDAVI Control" compatible Panasonic receiver with an HDMI cable, the receiver will also turn off.
About the Standby Power Save function[4]
Even with "Power Save" set to "Off" (➡ 90), this unit turns to "Power Save" states (➡ 18) when Power off link works, so it is possible to reduce the power consumption while this unit is in standby mode.
• "Standby Power Save" setting is required to be activated on the TV.
• When turning this unit on or off without using Power off link function, this unit will not turn to "Power Save" states.

Direct TV Recording[1]

This function allows you to immediately start recording the programme that you are viewing on the TV.
• Depending on the TV type connected with this unit, this function may not work if you select the TV channels on this unit.
Refer to the TV operating instructions for operation.
• The titles are recorded to HDD.

To stop recording
Press [■].

Playing music continuously even after turning off power to the television[5]

(➡ 67, Playing music continuously even after turning off power to the television)

[1] This function is available with the TV that supports "HDAVI Control 3" or later.
[2] This button is available only when this unit is on.
[3] When this button is pressed, the playback image is not immediately displayed on the screen and it may not be possible to watch the contents from where playback started.
   In this case, press [|◄◄] or [◄◄] to go back to where playback started.
[4] This function is available with the TV that supports "HDAVI Control 4".
[5] This function is available with the TV that supports "HDAVI Control 2" or later.

Note
• These functions may not work normally depending on the equipment condition.
• About "HDAVI Control" function, read the instructions of the connected equipment (e.g., TV) too.

Easy control only with VIERA remote control

If you connect this unit to the TV that supports "HDAVI Control 2" or later with an HDMI cable, you can enjoy using more convenient functions.
You can operate this unit using buttons on the TV remote control.
The buttons that you can use for this unit vary depending on the TV. For details, refer to the operating instructions of the TV.
Use the remote control supplied with this unit if you cannot operate this unit using buttons on the TV remote control.
• The operation of this unit may be interrupted when you press incompatible buttons on the TV remote control.

Using the FUNCTION MENU window to operate this unit[※1]

Refer to the TV operating instructions for operating the TV.
1 Display this unit's "FUNCTION MENU" window using the TV remote control.
  • If this unit is set to standby mode, it will automatically turn on.

2 Select the item you want to operate with the TV remote control, and press [OK].
About the FUNCTION MENU window (➡ 13, 79).

Pause Live TV programme[※2]

You can pause the TV programme you are watching and resume later by temporarily saving it on the HDD. This is useful when you have to briefly stop watching TV to run an errand.
If you stop the Pause Live TV function, then the TV programme temporarily saved on the HDD will be deleted.

Refer to the TV operating instructions for operating the TV.

1 When you want to pause the TV programme
  Turn on the "Pause Live TV" function using the TV remote control.
  • This unit turns on automatically.
2 When you want to resume
  Display the Control Panel (➡ below) and press [OK].
  • The TV programme resumes.

To stop Pause Live TV
① Press [▼] while the Control Panel is displayed.
② Press [◄, ►] to select "Yes" and press [OK].

Refer to "Note" on page 79, "To pause the TV programme you are watching—Pause Live TV".

Using the OPTION menu window to operate this unit[※1]

By using the TV remote control, you can play discs using "Control Panel" (➡ below).
1 Press [OPTION].
  e.g.,

Control Panel	
FUNCTION MENU	
Aspect	
Play Menu	
Top Menu	
Menu	
Drive Select	

OK RETURN

Note
You cannot use the OPTION menu while the Top Menu for DVD-Video is displayed and while DVD-Video is being copied.
2 Select an item then press [OK].

Control Panel	Control Panel is displayed (➡ below).
FUNCTION MENU	FUNCTION MENU window is displayed (➡ above).
Aspect	Switch the screen mode (➡ 78).
Play Menu	Play menu is displayed (➡ 77).
Top Menu DVD-V	Top menu is displayed (➡ 21).
Menu DVD-V	Menu is displayed.
Drive Select	Select the HDD, DVD or SD drive.
Rotate RIGHT (JPEG)	Rotate the still picture (➡ 59).
Rotate LEFT (JPEG)	
Zoom in (JPEG)	Enlarge or shrink the still picture (➡ 59).
Zoom out (JPEG)	
TV Power Off	Play music continuously even after turning off power to the television (➡ 67).

■ Using the Control Panel
Using the Control Panel, you can operate search backward, search forward, stop, etc, with the TV remote control.
Select "Control Panel" and press [OK] in step 2 of "Using the OPTION menu window to operate this unit" (➡ above).
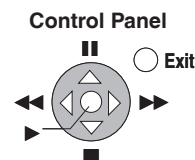
The Control Panel is displayed (➡ right).
• When playing a title, etc.
  −[▲]: Pause, [▼]: Stop, [◄]: Search backward, [►]: Search forward, [OK]: Play, [EXIT]: Exit the Control Panel.
• While playing still pictures
  −[▼]: Stop, [◄]: View previous picture, [►]: View next picture, [EXIT]: Exit the Control Panel.

Control Panel
⏸ ○ Exit
◄◄ ►►
►
■

[※1] This function is available with the TV that supports "HDAVI Control 2" or later.
[※2] This function is available with the TV that supports "HDAVI Control 3" or later.

■ When you want to leave the TV on and set only this unit to standby mode
Press [⏻] on this unit's remote control and set to standby mode.

■ When not using "HDAVI Control"
Set "VIERA Link" in the Setup menu to "Off" (➡ 89).

Using on-screen menus

Common procedures

1 Press [DISPLAY].

Disc		
Play	**Soundtrack**	1 Digital 2/0 ch
Picture	**Subtitles**	Off
Sound	**Audio channel**	L R

Menu   Item   Setting

- Depending on the condition of the unit (playing, stopped, etc.) and disc contents, there are some items that you cannot select or change.
- The menu is not displayed when playing still pictures.

2 Press [▲, ▼] to select the menu and press [▶].

3 Press [▲, ▼] to select the item and press [▶].

4 Press [▲, ▼] to select the setting.

- Some items can be changed by pressing [OK].

To clear the on-screen menus
Press [DISPLAY].

Disc menu—Setting the disc content

Video AVCHD

The video recording method appears.

Soundtrack*
HDD RAM -R -R DL -RW(V) +R
+R DL +RW -RW(VR)
The disc's audio attributes appear (➡ right, Audio attribute), except the title in DR mode and the title copied from high definition video (AVCHD format) on HDD.
DVD-V AVCHD
Select the audio and language (➡ right, Audio attribute, Language).
DivX
Select the soundtrack number.
Soundtrack numbers are displayed even when there is only one audio type.

Subtitles*
DVD-V AVCHD
Turn the subtitle on/off and select the language (➡ right, Language).
HDD RAM -R -R DL -RW(V) +R
+R DL +RW -RW(VR)
(Only discs that contain subtitle on/off information)
Turn the subtitle on/off, except the title in DR mode and the title copied from high definition video (AVCHD format) on HDD.
- Subtitle on/off information cannot be recorded using this unit.
DivX
Turn the subtitle on/off and select "Text" or the subtitle number.
- "Text" or Subtitle number is displayed even if there are not multiple subtitles.

Audio Selection HDD (titles recorded in DR mode, or copied from high definition video (AVCHD format))

Switch in the case of multiple audio.

Subtitle Language HDD (titles recorded in DR mode, or copied from high definition video (AVCHD format))

Select the subtitle language in the case of multiple languages.

Angle* DVD-V +R +R DL +RW

Change the number to select an angle.

Audio channel HDD (titles in recording mode other than DR) RAM -R -R DL -RW(V) -RW(VR) and DivX

(➡ 37, Changing audio during play)

---

* With some discs, you may only be able to make changes using the menus (➡ 21) on the disc.
- The display changes according to the disc content. You cannot change when there is no recording.

Audio attribute

LPCM/Digital/DTS/MPEG:	Signal type
k (kHz):	Sampling frequency
b (bit):	Number of bits
ch (channel):	Number of channels

Language

ENG:	English	DAN:	Danish	THA:	Thai
FRA:	French	POR:	Portuguese	POL:	Polish
DEU:	German	RUS:	Russian	CES:	Czech
ITA:	Italian	JPN:	Japanese	SLK:	Slovak
ESP:	Spanish	CHI:	Chinese	HUN:	Hungarian
NLD:	Dutch	KOR:	Korean	FIN:	Finnish
SVE:	Swedish	MAL:	Malay	✳:	Others
NOR:	Norwegian	VIE:	Vietnamese		

Play menu—Change the play sequence

This function works only when the elapsed play time is displayed. Select the item for repeat play. Depending on the disc, the items that can be selected will differ.

Repeat Play

Items displayed depends on the contents of the playback.

- All
- Playlist
- Title
- Chapter

Select "Off" to cancel.

Picture menu—Change the picture quality

Mode

Select the picture quality mode during play.

- **Normal:** Default setting
- **Soft:** Soft picture with fewer video artifacts
- **Fine:** Details are sharper
- **Cinema:** Mellows movies, enhances detail in dark scenes. (This does not affect the titles in DR mode.)

HD optimizer

It will compensate the mosaic noise in the video and haze around the characters precisely.

Progressive※ (➡ 114)

Select the method of conversion for progressive output to suit the type of title being played (➡ 114, Film and video).

- **Auto:** Automatically detects the film and video content, and appropriately converts it.
- **Video:** Select when using "Auto", and the content is distorted.
- **Film:** Select this if the edges of the film content appear jagged or rough when "Auto" is selected. However, if the video content is distorted as shown in the illustration to the right, then select "Auto".
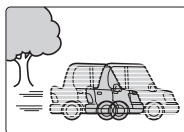
※ It will work when "HDMI Video Mode" in the Setup menu is "Off" (➡ 89), "Component Resolution" in the Setup menu is "576p/480p" (➡ 89) and playing `DVD-V`.

Sound menu—Change the sound quality

Sound Effects
`HDD` `RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` `DVD-V` `-RW(VR)` `CD` `AVCHD`

- **Re-master1**
- **Re-master2**

(Discs recorded at 48 kHz or less)
This feature gives you a more natural sound by adding higher frequency signals not recorded on the track.

- This function is effective for audio from the HDMI terminal or the DIGITAL AUDIO OUT terminal only when "Dolby Digital", "DTS", "MPEG" or "HE-AAC" is set to "PCM". (However, in this case, audio is output as 2 ch from the DIGITAL AUDIO OUT terminal.)

Dialogue Enhancer
`HDD` `RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` `DVD-V` `-RW(VR)` `AVCHD`

(3-channel or over only, including a centre channel)

The volume of the centre channel is raised to make dialogue easier to hear.

Status messages

Press [STATUS ⓘ].
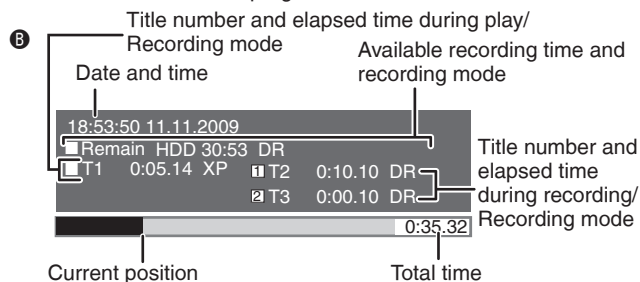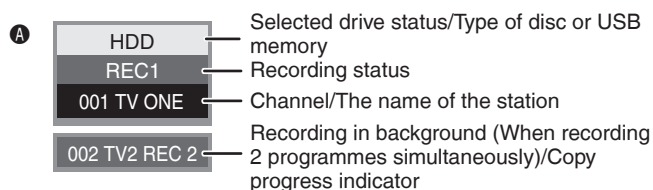
The display changes each time you press the button.

Ⓐ
Ⓑ
Ⓒ
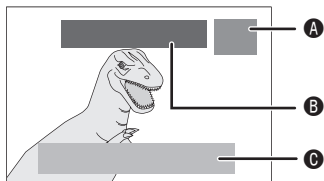
When watching the TV programme

Ⓐ
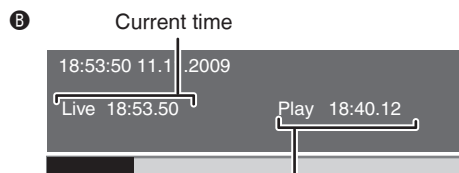| HDD |
| 30:27 DR |
| 001 TV ONE |

— The remaining time and recording mode

Ⓒ
1 TV ONE	10:30	All DVB Channels
Coronation street		Select Favourites▢
9:00 - 11:00	◄ Now ►	For info press ⓘ
Rating:PG		🔄 🗐 I/II
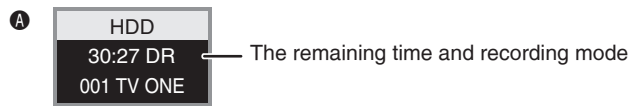
Digital channel information (➡ 20)

When recording the TV programme

Ⓐ
| HDD |
| REC1 |
| 001 TV ONE |
| 002 TV2 REC 2 |

— Selected drive status/Type of disc or USB memory
— Recording status
— Channel/The name of the station
— Recording in background (When recording 2 programmes simultaneously)/Copy progress indicator

Ⓑ

Title number and elapsed time during play/
Recording mode

Date and time

Available recording time and recording mode

```
18:53:50 11.11.2009
▢Remain  HDD 30:53  DR
▢T1    0:05.14  XP    ❶T2    0:10.10  DR
                      ❷T3    0:00.10  DR
                              0:35.32
```

Title number and elapsed time during recording/Recording mode

Current position   Total time

Ⓒ
1 TV ONE	10:30	All DVB Channels
Coronation street		Select Favourites▢
9:00 - 11:00	◄ Now ►	For info press ⓘ
Rating:PG		🔄 🗐 I/II

Digital channel information (➡ 20)

When using Pause Live TV

Ⓐ
| HDD |
| PLAY |
| Pause Live TV |

— Play status

Ⓑ

Current time

```
18:53:50 11.11.2009
Live  18:53.50          Play  18:40.12
```

The time when the picture currently displayed on the television was broadcasted

Switch the aspect ratio of the screen

When black bars are shown at the top, bottom, left, and right sides of the screen, you can enlarge the image to fill the screen.

1 Press [OPTION].

2 Press [▲, ▼] to select "Aspect" and press [OK].

3 Press [◄, ►] to select the item.

- **Normal:**
  Normal output
- **Side cut:**
  The black bars on the right and left sides of the 16:9 image disappear and the image is enlarged. Please note that the right and left sides of the image are cut off when the black bar is not displayed.

16:9 image with black bars on the right and left

Display as frame on the 4:3 aspect ratio TV screen※

Enlarged display with black bar erased with Side cut

Displayed with black bars on right and left on the 16:9 aspect ratio TV screen

Enlarged display with black bar erased with Side cut
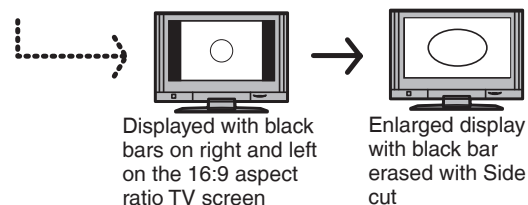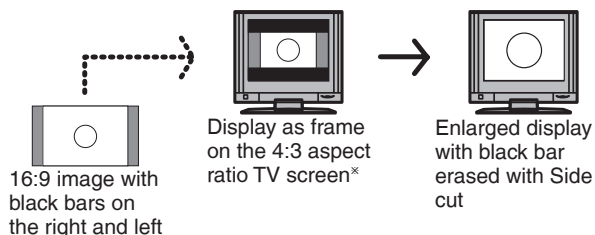
※ Only when "TV Aspect" (➡ 88) is set to "Letterbox".

- **Zoom:**
  The black bars on the top and bottom sides of the 4:3 image disappear and the image is enlarged. Please note that the top and bottom sides of the image are cut off when the black bar is not displayed.

4:3 image with black bars at the top and bottom

Displayed as frame on the 16:9 aspect ratio TV screen

Enlarged display with black bar erased with Zoom
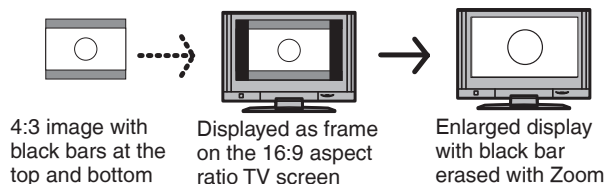
4 Press [OK].

Note
- The screen mode is switched to "Normal" in the following situations:
  – when you change channel
  – when you start or end the playback of a title
  – when the unit is turned off or on.
- **DVD-V** "Side cut" does not have any effect.
- When "TV Aspect" (➡ 88) is set to "Pan&Scan" or "Letterbox", the "Zoom" effect is disabled.

To return to the previous screen
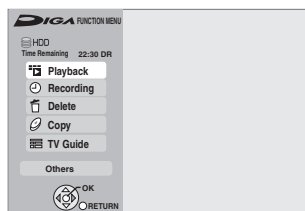Press [RETURN ⮐].

To exit the screen
Press [EXIT].

FUNCTION MENU window

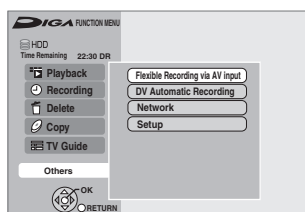By using the FUNCTION MENU window you may access the main functions quickly and easily.

1 Press [FUNCTION MENU].

Functions displayed depend on the selected drive or type of disc.

```
DIGA FUNCTION MENU
HDD
Time Remaining    22:30 DR
  Playback
  Recording
  Delete
  Copy
  TV Guide
    Others
          OK
          RETURN
```

2 Press [▲, ▼] to select an item and press [OK].

- If you select "Others" and press [OK], the following screen appears. Press [▲,▼] to select an item and press [OK].

```
DIGA FUNCTION MENU
HDD
Time Remaining    22:30 DR
  Playback      Flexible Recording via AV input
  Recording     DV Automatic Recording
  Delete        Network
  Copy          Setup
  TV Guide
    Others
          OK
          RETURN
```

- If you press [RETURN ⍐], you can return to the previous screen.

Refer to "Easy access to various functions—FUNCTION MENU Display" for detailed information. (➡ 13)

To exit the FUNCTION MENU window
Press [FUNCTION MENU].

To pause the TV programme you are watching—Pause Live TV

You can pause the TV programme you are watching using this unit's tuner and resume later by temporarily saving it on the HDD. This is useful when you have to briefly stop watching TV to run an errand. If you stop the Pause Live TV function, then the TV programme temporarily saved on the HDD will be deleted.

Preparation
- Turn on the television and select the appropriate AV input to suit the connections to this unit.
- Turn on this unit.

1 Press [INPUT SELECT] to select "TV".

2 Press [∧ ∨ CH] to select the channel.

3 When you want to pause the TV programme
Press [▋▋].

```
HDD
PAUSE
Pause Live TV
```
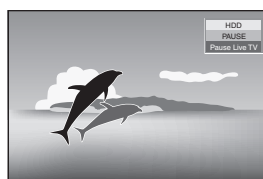
4 When you want to resume
Press [▶] (PLAY).
- The programme is saved on the HDD in DR recording mode.
- Programmes can be saved temporary up to 8 hours on the HDD. (This may vary depending on the HDD free space.)

Operation during Pause Live TV

Search	**Press [◀◀, ▶▶].** The speed increases up to 5 steps. • Press [▶] (PLAY) to restart play.
Pause	**Press [▋▋].** • Press [▶] (PLAY) to restart.
Quick View	**Press and hold [▶] (PLAY/×1.3).** • Press again to return to the normal speed.
Slow-motion	**While paused, press [◀◀] or [▶▶].** The speed increases up to 5 steps. • Press [▶] (PLAY) to restart play.
Stop Pause Live TV	1 **Press [▋].** 2 **Press [◀, ▶] to select "Yes" and press [OK].**

Note
- Temporary save is stopped in following cases.
  - When save time exceeds 8 hours
  - When there is no HDD free space
  - When 2 programmes are recorded simultaneously
- The Pause Live TV function does not work
  - The clock is not set.
  - While 2 programmes simultaneous recording
  - While watching a programme being recorded
  - When DV is selected
  - When a radio programme is selected
- When this unit is not operated for approximately 10 minutes while the screen is being displayed the screen saver is displayed [only when "Screen Saver" in the Setup menu is set to "On" (➡ 88)]. To return to the previous screen, press [RETURN ⍐].
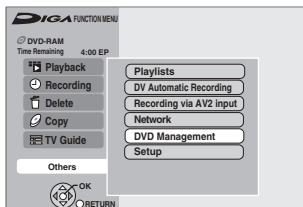
Disc and card management

RAM -R -R DL -RW(V) +R +R DL +RW -RW(VR) SD

Preparation
• Press [DRIVE SELECT] to select the DVD or SD drive.

Common procedures

1 While stopped
Press [FUNCTION MENU].

2 **Press [▲, ▼] to select "Others" and press [OK].**

DIGA FUNCTION MENU	
DVD-RAM	
Time Remaining 4:00 EP	
Playback	Playlists
Recording	DV Automatic Recording
Delete	Recording via AV2 input
Copy	Network
TV Guide	DVD Management
	Setup
Others	
OK RETURN	

3 **Press [▲, ▼] to select "DVD Management" or "Card Management" and press [OK].**
e.g., RAM

DVD Management	Files 1	Titles 11
DVD-RAM	Time Remaining 4:00 EP	Used 0 : 22
	Disc Name	
	Disc Protection 🔓 Off	
	Delete all titles	
	Format Disc	
OK RETURN		
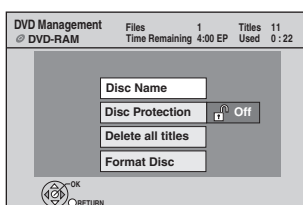
To return to the previous screen
Press [RETURN ⤺].

To exit the screen
Press [EXIT].

Setting the protection

RAM

After performing steps 1–3 (➡ left)

1 **Press [▲, ▼] to select "Disc Protection" and press [OK].**

2 **Press [◄, ►] to select "Yes" and press [OK].**
e.g., RAM

DVD Management	Files 1	Titles 11
DVD-RAM	Time Remaining 4:00 EP	Used 0 : 22
	Disc Name	
	Disc Protection 🔒 On	
	Delete all titles	
	Format Disc	
OK RETURN		
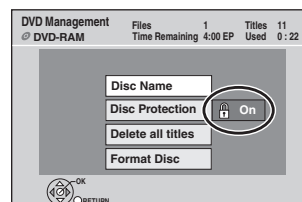
The lock symbol appears closed when the disc is write-protected.

To return to the previous screen
Press [RETURN ⤺].

To exit the screen
Press [EXIT].

Cartridge-protection

For a DVD-RAM with a cartridge
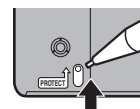
Providing a name for a disc

RAM -R -R DL -RW(V) +R +R DL +RW

You can provide a name for each disc.

Preparation
• RAM Release protection (➡ above, Setting the protection).

After performing steps 1–3 (➡ left)

1 **Press [▲, ▼] to select "Disc Name" and press [OK].**
(➡ 72, Entering text)

• The disc name is displayed in the DVD Management window.

DVD Management	Files 1	Titles 1
DVD-RAM	Time Remaining 4:00 EP	Used 0
My favourite		

• -R -R DL -RW(V) +R +R DL With a finalised disc, the name is displayed on the Top Menu.

My favourite		01/02
◄	01 Chapter 1	02 Chapter 2

• +RW The disc name is displayed only if you play the disc on other equipment after creating top menu.

To return to the previous screen
Press [RETURN ⤺].

To exit the screen
Press [EXIT].

Deleting all titles—Delete all titles

`RAM`

Preparation
• Release protection (➡ 80, Setting the protection).

After performing steps 1–3 (➡ 80, Common procedures)

1 **Press [▲, ▼] to select "Delete all titles" and press [OK].**

2 **Press [◀, ▶] to select "Yes" and press [OK].**

3 **Press [◀, ▶] to select "Start" and press [OK].**
    A message appears when finished.

4 **Press [OK].**

To return to the previous screen
Press [RETURN ↰].

To exit the screen
Press [EXIT].

`Note`
• **Once deleted, the recorded contents are lost and cannot be restored.** Make certain before proceeding.
• Still picture data (JPEG) or computer data cannot be deleted.
• Delete does not work if one or more titles are protected.

Enabling the unit's recording function—Format

`RAM` `-RW(V)` `+RW` `-RW(VR)`
`+R` `+R DL` (New disc only)
`SD`

Preparation
• `RAM` `SD` Release protection (➡ 11, 80, Setting the protection).

`Note`
Formatting deletes all contents (including computer data), and they cannot be restored. Check carefully before proceeding. The contents are deleted when you format a disc or card even if you have set protection.

After performing steps 1–3 (➡ 80, Common procedures)

1 **Press [▲, ▼] to select, "Format Disc" or "Format Card" and press [OK].**

2 **Press [◀, ▶] to select "Yes" and press [OK].**

3 **Press [◀, ▶] to select "Start" and press [OK].**
    A message appears when formatting is finished.
    `Note`
    • Formatting normally takes a few minutes; however, it may take up to a maximum of 70 minutes (`RAM`).
    • **Do not disconnect the AC mains lead while formatting.** This can render the disc or the card unusable.

4 **Press [OK].**

`Note`
• When a disc or card has been formatted using this unit, it may not be possible to use it on any other equipment.
• `-R` `-R DL` `CD` Formatting cannot be performed.
• `-RW(V)` `-RW(VR)` You can format DVD-RW only as DVD-Video format on this unit.

To stop formatting `RAM`
Press [RETURN ↰].
• You can cancel formatting if it takes more than 2 minutes. The disc must be reformatted if you do this.

To return to the previous screen
Press [RETURN ↰].

To exit the screen
Press [EXIT].

Convenient functions

Selecting the background style—Top Menu

`-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW`

The background selected here will be displayed as the DVD-Video top menu after finalising or creating Top Menu (`+RW`).

After performing steps 1–3 (➡ 80, Common procedures)

1 **Press [▲, ▼] to select "Top Menu" and press [OK].**

2 **Press [▲, ▼, ◄, ►] to select the background and press [OK].**

```
Top Menu List
  [1]    [2]    [3]
```
Display after finalising
Thumbnail — [01]
(Still picture)
                    Title Name
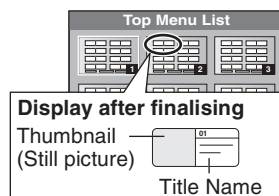
- You can change thumbnails displayed in the top menu. (➡ 43, Change Thumbnail)

Selecting whether to show the Top Menu first—Auto-Play Select

`-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW`

You can select whether to show the top menu after finalising or creating Top Menu (`+RW`).

After performing steps 1–3 (➡ 80, Common procedures)

1 **Press [▲, ▼] to select "Auto-Play Select" and press [OK].**

2 **Press [▲, ▼] to select "Top Menu" or "Title 1" and press [OK].**

Top Menu : The top menu appears first.
　　Title 1 : The disc content is played without displaying the top menu.

Finalising—Finalise

`-R` `-R DL` `-RW(V)` `+R` `+R DL`

You can play these discs on compatible DVD players by finalising it on the unit, effectively making it into DVD-Video that complies with DVD-Video standards. Before finalising, select the background on the "Top Menu" (➡ above). The menu you create with the unit can also be used on most DVD players.

After performing steps 1–3 (➡ 80, Common procedures)

1 **Press [▲, ▼] to select "Finalise" and press [OK].**

2 **Press [◄, ►] to select "Yes" and press [OK].**

3 **Press [◄, ►] to select "Start" and press [OK].**

A message appears when finalising is finished.
Note
- You cannot cancel finalising.
- Finalising takes up to 15 minutes.
　(`-R DL` `+R DL` Finalising takes up to 60 minutes.)
- **Do not disconnect the AC mains lead while finalising.** This will render the disc unusable.

4 **Press [OK].**

Note
When finalising a high-speed recording compatible disc, it may take longer than the time displayed on the confirmation screen (approximately four times).

- **After finalising**
  – `-R` `-R DL` `+R` `+R DL` The disc becomes play-only and you can no longer record or edit.
  – `-RW(V)` You can record and edit the disc after formatting (➡ 81) although it becomes play-only after finalising.

- You cannot finalise discs recorded on other manufacturer's equipment.
- If you finalise discs recorded on Panasonic equipment other than this unit, the background selected as "Top Menu" may not be displayed.
- Discs finalised on this unit may not be playable on other players due to the condition of the recording.

Creating Top Menu—Create Top Menu

`+RW`

+RW discs contain no Top Menu data. Top Menu is a convenient function. We recommend you create the menu before playing a +RW disc on other equipment.
You cannot use the Top Menu for playing on this unit.

Make selections from "Top Menu" and "Auto-Play Select" (➡ left) before creating top menu.

After performing steps 1–3 (➡ 80, Common procedures)

1 **Press [▲, ▼] to select "Create Top Menu" and press [OK].**

2 **Press [◄, ►] to select "Yes" and press [OK].**

3 **Press [◄, ►] to select "Start" and press [OK].**

Creating Top Menu starts. You cannot cancel creating. Creating Top Menu can take a few minutes.

4 **Press [OK].**

Note
- You can record or edit discs after creating the Top Menu. But the created menu is deleted when you record or edit disc. In such cases, create the Top Menu again by using "Create Top Menu".

To return to the previous screen
Press [RETURN ↵].

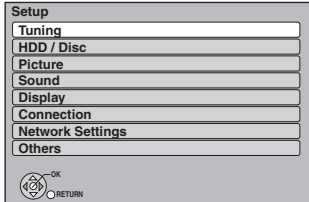**To exit the screen**
Press [EXIT].

Changing the unit's settings

You can change the unit's settings using the Setup menu.
• The settings remain intact even if you switch the unit to standby.

Common procedures

1 While stopped
Press [FUNCTION MENU].

2 **Press [▲, ▼] to select "Others" and press [OK].**

3 **Press [▲, ▼] to select "Setup" and press [OK].**

```
Setup
Tuning
HDD / Disc
Picture
Sound
Display
Connection
Network Settings
Others

        OK
      RETURN
```

4 **Press [▲, ▼] to select the menu and press [OK].**

5 **Press [▲, ▼] to select the item and press [OK].**
• If there are more items, repeat step 5.

6 **Press [▲, ▼, ◀, ▶] to select the option and press [OK].**
• Follow the instruction on the screen if the operation method is different.

To return to the previous screen
Press [RETURN ⤺].

To exit the screen
Press [EXIT].

Tuning

■ Favourites Edit
You can create four groups of channels for viewing and recording easier. Editing these groups does not affect the channel setting itself.
• Timer recording may not work correctly if you edit the groups during timer recording standby.

Press the "Blue" button to select the group.

```
Favourites Editor
All DVB Channels              Favourites 1
  1 TV ONE
  2 TV2
  5 Maori Television
  6 TVNZ 6
  7 TVNZ 7
 20 TVNZ SPORT EXTRA
 22 Parliament TV
 28 Chinese TV
Select Channel
Store                                    Page Up ⌃
       RETURN                          Page Down ⌄
   ▪          ▪ Add  ▪ Add all  ▪ Select Favourites
```
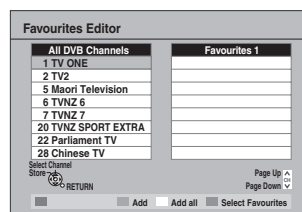
To add channels to a group
① Press [▲, ▼] to select the channel in the "All DVB Channels" column and press the "Green" button.
• Repeat this step to add other channels.
• Press the "Yellow" button to add all the available channels to the group. (This function is available only when no channels have been added to the group.)
② Press [OK] to save the group.

To change the order of channels of a group
① Press [▶]*.
② Press [▲, ▼] to select the channel in the "Favourites" column to move and press the "Green" button.
③ Press [▲, ▼] to select the new position of the channel and press the "Green" button.
• Repeat the steps ②–③ to move other channels.
④ Press [OK] to save the group.

To delete channels on a group
① Press [▶]*.
② Press [▲, ▼] to select the channel in the "Favourites" column and press the "Yellow" button.
• Repeat this step to delete other channels.
• Press the "Blue" button to delete all the channels from the group.
③ Press [OK] to save the group.
Deleting a channel from a group does not affect the channel itself. You can still select the channel from the "All DVB Channels" group.

To change the name of a group in the "Favourites" column
① Press [▶]*.
② Press the "Red" button.
• User input screen appears.
③ Press [▲, ▼, ◀, ▶] to select a character and press [OK].
Repeat this step to enter other characters.
• **To delete a character**
Press the "Red" button.
④ Press [RETURN ⤺].
* When the station name of the "All DVB Channels" column is highlighted

■ DVB Channel List
You can set channel list and change the channel number.
① Press [▲, ▼] to select "DVB Channel List" and press [OK].
② Press [▲, ▼] to select the channel.

To hide the channel
You can skip it by pressing [∧ ∨ CH] while watching TV programme on this unit.
(But you can select it by pressing the numbered buttons to enter the channel number directly.)
③ Press [OK]. The check mark disappears.
• Press [OK] again to cancel.

To change the channel number
③ Press the "Green" button and press the numbered buttons to set the channel number you want.
④ Press [OK] to confirm it.

Note
• You can confirm the current channel setting. Press the "Red" button, DVB Manual Tuning screen will appear.

■ Auto Tuning

You can restart auto channel setting if set up (➡ 18) fails for some reason.

① Press [▲, ▼] to select "Auto Tuning" and press [OK].
   When the confirmation screen appears
② Press [◄, ►] to select "Yes" and press [OK].
   Tuning will start automatically.
• When restarting the auto tuning using the main unit's buttons (➡ 110, To reset this unit)
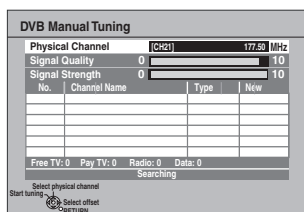
■ Download from TV

You can use "Download from TV" when you connect the unit to a VIERA Link (HDAVI Control 3 or later) compatible TV with an HDMI cable.

① Press [▲, ▼] to select "Download from TV" and press [OK].
   When the confirmation screen appears
② Press [◄, ►] to select "Yes" and press [OK].

■ DVB Manual Tuning

You can set channels manually when the Auto Tuninig could not complete successfully.

① Press [▲, ▼] to select "DVB Manual Tuning" and press [OK].

```
DVB Manual Tuning
  Physical Channel      [CH21]           177.50  MHz
  Signal Quality    0                      10
  Signal Strength   0                      10
   No.   Channel Name          Type   New




  Free TV: 0   Pay TV: 0   Radio: 0   Data: 0
                    Searching
Start tuning   Select physical channel
            Select offset
            RETURN
```

② Press [▲, ▼] to select the channel you want to set.
③ Press [◄, ►] to adjust the frequency.
   • The frequency rises and falls at equal intervals.
   • Adjust the frequency by checking the signal strength and signal quality displays.
     [Refer to "DVB Signal Condition" (➡ right) for signal quality and signal strength.]
④ Press [OK] to start scan.
   The set channel is displayed in the table.
⑤ Press [EXIT] and press [∧ ∨ CH] to check that applicable channels have been selected.

■ Add New DVB Channels

You can search for newly added terrestrial digital channels to receive.

① Press [▲, ▼] to select "Add New DVB Channels" and press [OK].
   The unit starts searching for newly available terrestrial digital channels. This takes about 3 minutes.

```
Add New DVB Channels
  Scan              21               69
  This will take about 3 minutes.
   CH   Channel Name          Type   Quality




  Free TV: 0   Pay TV: 0   Radio: 0   Data: 0
                    Searching
  RETURN
```
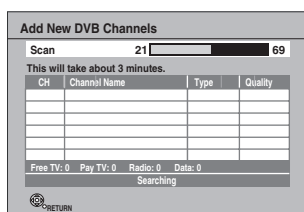
A message is displayed when the search is finished.
"No new channels found" is displayed when no new channels can be found.
② Press [OK] to save the newly found channels.

■ DVB Signal Condition

You can check the quality and strength of digital broadcast signals. Realign the aerial if you are receiving a poor signal.

When "DVB Signal Condition" is displayed in grey and cannot be selected:

① Press [EXIT] to exit the screen.
② Press [INPUT SELECT] to select "TV".
③ Display the Setup menu again (➡ 83).

Press [▲, ▼] to select "DVB Signal Condition" and press [OK].
The quality and strength of the signal are shown.
Press [∧ ∨ CH] to select the channel.

```
DVB Signal Condition
  Channel Name              No service
  Signal Quality     0                    10
  Signal Strength    0                    10

  RETURN                  Chan.Up     ∧
                          Chan.Down   CH ∨
```
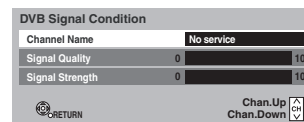
Signal Quality
Below 2 (display red):
The signal quality is so poor that there may be interference in the pictures and sound.
2–5 (display orange):
The signal quality is basically adequate, but brief interference in the pictures and sound is possible in isolated case.
Over 5 (display green):
Optimum picture and sound quality.

Signal Strength
The display for signal strength is grey. "0" means signal strength 0%, "10" means signal strength 100%.
If the signal is too strong, the display will change from grey to red. Reduce the signal amplification at your aerial.
• When the signal is weak:
   – adjust the position and direction of the aerial.
   – adjust the aerial reception with "DVB Manual Tuning" in the Setup menu (➡ left).
   – check that the current digital broadcast channel is correctly broadcasting.

■ DVB Preferred Language

① Press [▲, ▼] to select "DVB Preferred Language" and press [OK].
② Press [▲, ▼] to select the item.
③ Press [◄, ►] to select the language.

You can select up to 6 different subtitles and audio tracks to be used when multi audio and subtitles are received. Select the language.
If the selected language is not available, then the original language will be selected.

Multi Audio

| [English] | [Maori] | [French] | [German] |
| [Italian] | [Spanish] | | |

Subtitles

| [English] | [Maori] | [French] | [German] |
| [Italian] | [Spanish] | | |

■ New Channel Message

When a new DVB channel is added, this unit will be informed automatically. Then the confirmation message appears. If you press [OK], Auto Tuning starts.

① Press [▲, ▼] to select "New Channel Message".
② Press [◄, ►] to select "Automatic" or "Off".

[Automatic]
[Off]   The channel messages are not shown.

(All factory default settings are indicated with underlined text.)

HDD/Disc

(All factory default settings are indicated with underlined text.)

Settings for Playback
• Press [OK] to show the following settings.

Soundtrack
(When selecting this item and press [OK], the title "Soundtrack for DVD-Video" is displayed.)

[English]   [German]   [French]   [Italian]

[Spanish]

[Original]   The original language of each disc will be selected.

[Other ✳✳✳✳]*

Subtitles
(When selecting this item and press [OK], the title "Subtitles for DVD-Video" is displayed.)

[Automatic]   If the language selected for "Soundtrack for DVD-Video" is not available, subtitles of that language will automatically appear if available on that disc.

[English]   [German]   [French]   [Italian]

[Spanish]

[Other ✳✳✳✳]*

Menu
(When selecting this item and press [OK], the title "Menu for DVD-Video" is displayed.)

[English]   [German]   [French]   [Italian]

[Spanish]

[Other ✳✳✳✳]*

DVD-Video Ratings
(When selecting this item and press [OK], the title "Ratings" is displayed.)
Set a ratings level to limit DVD-Video play.
Follow the on-screen instructions. Enter a 4-digit PIN with the numbered buttons when the PIN setting screen is shown. It will be the common PIN for "DVD-Video Ratings" and "Network Lock".
Do not forget your PIN.
Setting ratings (When level 8 is selected)

[8 No Limit]	All DVD-Video can be played.
[1 to 7]	Prohibits play of DVD-Video with corresponding ratings recorded on them.
[0 Lock All]	Prohibits play of all DVD-Video.

• Changing settings (When level 0 to 7 is selected)

[Unlock Recorder]	[Change PIN]
[Change Level]	[Temporary Unlock]

* [Other ✳✳✳✳]
Enter a code (➡ 101) with the numbered buttons. When the selected language is not available on the disc, the default language is played. There are discs where you can only switch the language from the menu screen (➡ 21).
DVD-V
Choose the language for audio, subtitle and disc menus.
• Some discs start in a certain language despite any changes you make here.

Settings for Recording
• Press [OK] to show the following settings.

Recording time in EP mode
Select the maximum number of hours for recording in EP mode (➡ 29, Recording modes and approximate recording times).

[6 hours]	You can record for 6 hours on an unused 4.7 GB disc.
[8 hours]	You can record for 8 hours on an unused 4.7 GB disc.

• The sound quality is better when using "6 Hours" than when using "8 Hours".

Aspect for Recording
Sets the aspect ratio when recording or copying in XP, SP, LP, EP, FR mode.

[Automatic]   The programme will be recorded in the original aspect used when recording started (including when recording started at a commercial, etc.).

[16:9]   [4:3]

• When recording to the HDD or DVD-RAM with "Rec for High Speed Copy" set to "Off", programme will be recorded in the original aspect ratio.
• In the following cases, even when set to "Automatic" or "16:9", recordings will be made or copied in 4:3.
– **-R** **-R DL** **-RW(V)** When the recording mode is set to "EP" or "FR (recordings 5 hours or longer)" mode.
– When recording or copying to a +R and +RW.
– When copying to a +R DL

Rec for High Speed Copy
You can copy a programme recorded in XP, SP, LP, EP or FR mode on the HDD from the HDD to DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW using high speed mode. However, screen size, etc. is restricted (➡ below).
We recommend turning the setting "Off" if high speed copy to DVD-R, etc. is not necessary when recording a programme.
This setting is valid for the following cases:
– Recording from an external equipment (including DV equipment)
– Copying from a finalised DVD-Video disc.

[On]   You can high-speed copy to DVD-R, etc. Press [◄, ►] to select "Yes" and press [OK].
    • The following restrictions are applied to recorded titles.
    – Recordings are made using the aspect ratio set in "Aspect for Recording" (➡ above).
    – Select the type of audio in advance from "Bilingual Audio Selection" (➡ 86).
    – You are no longer able to switch the audio when watching a programme on an input channel on the TV connected to this unit.

[Off]

DVD Speed for High Speed Copy
Select the speed of high-speed copying (When using high-speed copy compatible discs).

[Maximum]

[Normal (Silent)]   The noise generated by this unit is less than when "Maximum" is selected, however the time required for copying will double (approximately).

HDD Management
• Press and hold [OK] for 3 seconds to show the following settings.

Delete all titles
Delete all titles in HDD.
• Delete does not work if one or more titles are protected.

Format HDD
Format of the HDD is performed.

Picture

(All factory default settings are indicated with underlined text.)

Still Mode
Select the type of picture shown when you pause play (➡ 114, Frames and fields).

[Automatic]

[Field]	Select if jittering occurs when "Automatic" is selected. (The picture is coarser.)
[Frame]	Select if small text or fine patterns cannot be seen clearly when "Automatic" is selected. (The picture is clearer and finer.)

Seamless Play
Select the play mode between playlist chapter segments and partially deleted titles.
• It is not valid for titles in DR mode or AVCHD videos.

[On]	The chapters in playlists are played seamlessly. This does not work when there are several audio types included on the playlist and when using Quick View (PLAY×1.3). Additionally, the positioning of chapter segments may change slightly.
[Off]	The points where chapters in playlists change are played accurately, but the picture may freeze for a moment.

NTSC Video Output
Select how the NTSC image is output.

[NTSC]	Output as NTSC.
[PAL60]	Convert and output as PAL60. Select this when connected to the PAL format TV.

Sound

(All factory default settings are indicated with underlined text.)

Dynamic Range Compression
`DVD-V`
Change the dynamic range for late night viewing.

[On]   [Off]

Downmix
Switch the downmix system for playing back multi-channel surround sound.
• When "Dolby Digital", "DTS", "MPEG" or "HE-AAC" is set to "Bitstream" or "Bitstream (DTS)", there are no downmix effects for the audio output.
• The audio output will be in "Stereo" during AVCHD playback.

[Stereo]	When connected to equipment that does not support the virtual surround function.
[Surround encoded]	When connected to equipment that supports the virtual surround function

Bilingual Audio Selection
(Only when recording from DV input)
Select whether to record the main or secondary audio type when:
• Copying to a DVD-R, DVD-RW (DVD-Video format), +R and +RW.
• "Rec for High Speed Copy" is enabled. (➡ 85)
• Recording sound in LPCM (➡ 87 "Audio Mode for XP Recording").

[M 1]   [M 2]

• You cannot select the audio on this unit when recording from an external source, such as when copying from a video cassette recorder (except from DV equipment connected to this unit's DV input terminal). Select the audio on the other equipment.
• When recording from the unit's DV terminal, select the type of audio recording from "Audio Mode for DV Input" (➡ 87).

Digital Audio Output
• Press [OK] to show the following settings.

PCM Down Conversion
Select how to output audio with a sampling frequency of 96 kHz. It will be converted to 48 kHz regardless of the setting in following cases.
• The signals have a sampling frequency of over 96 kHz.
• The disc has copy protection.

[On]	Signals are converted to 48 kHz. (Choose when the connected equipment cannot process signals with a sampling frequency of 96 kHz.)
[Off]	Signals are output as 96 kHz. (Choose when the connected equipment can process signals with a sampling frequency of 96 kHz.)

Dolby Digital[*1]
DTS[*2]
MPEG[*1]
Select to output Dolby Digital, DTS Digital Surround or MPEG as bitstream or PCM.

| Note |
* Not making the proper settings may result in noise.
* If the unit is connected with the HDMI AV OUT terminal, the specifications of the connected equipment take preference over this unit and audio selected in these items may not be output (e.g., when a television is connected, the HDMI audio output of this unit is limited to down-mixed 2 ch.).

[Bitstream]   Select "Bitstream" when the connected equipment can decode the respective audio format.

[PCM]   Select "PCM" when the connected equipment cannot decode the respective audio format.

     Refer to the operating instructions for connected devices to verify whether or not they can decode each of the audio formats.
     Set the speaker output on the amplifier when output with PCM.

[*1] The default setting is "PCM".
[*2] The default setting is "Bitstream".

HE-AAC
Select to output HE-AAC as bitstream or PCM.

[Bitstream (DTS)]   Select "Bitstream (DTS)" when the connected equipment can decode HE-AAC format.

[PCM]   Select "PCM" when the connected equipment cannot decode HE-AAC format. Set the speaker output on the amplifier when output with PCM.

Audio Mode for XP Recording
Choose the audio type when recording or copying with XP mode.

[Dolby Digital] (➡ 114)   [LPCM] (➡ 114)

* The picture quality of LPCM recordings may be lower than that of normal XP mode recordings.
* The audio recording becomes Dolby Digital even if you selected LPCM when using a recording mode other than XP.
* When recording a bilingual broadcast, select the type of audio in advance from "Bilingual Audio Selection" (➡ 86).

Audio Mode for DV Input
You can select the kind of audio when recording from the unit's DV input terminal (➡ 54).

[Stereo 1]   Records audio (L1, R1).

[Stereo 2]   Records added audio such as narration (L2, R2) subsequent to original recording.

[Mix]   Records both Stereo 1 and Stereo 2.

* When recording bilingual broadcast, select the type of audio in advance from "Bilingual Audio Selection" (➡ 86).

Audio Mode for Digital Broadcast
Select the initial setting for audio tracks.

[Automatic]   Automatically selects the audio tracks if programme has more than two tracks.
     The priority is given in the following order - Dolby Digital Plus, HE-AAC, Dolby Digital, MPEG.

[MPEG]   The priority is given to MPEG as long as the programme contains MPEG audio.

Audio Channels for HG/HX/HE/HL Recording
This will set the audio when converting the recording mode to HG, HX, HE or HL, from DR (➡ 44).

[5.1-channel][*]   Record using 5.1 ch audio.

[2-channel]   Record using 2 ch audio.

[*] If the audio sampling frequency is not 48 kHz, surround audio is mixed and recorded in front LR channels. Audio will be output from two front speakers only, even if you play it on 5.1 ch speaker connection.

Convenient functions

RQT9487

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Display

(All factory default settings are indicated with underlined text.)

On-Screen Messages
Choose the approximate time until the digital channel information screen (➡ 20) disappears automatically.
The length of time the control panel (➡ 75) is displayed can also be changed, but "Off" does not work.

[Off] (The digital channel information is not displayed.)

[3 sec.]   [5 sec.]   [7 sec.]   [10 sec.]

Unit's Display
Changes the brightness of the unit's display.
This setting is fixed with "Automatic" if you set "Power Save" (➡ 90) to "On", and is changed to "Bright" if you set "Power Save" to "Off".

[Bright]   [Dim]

[Automatic]   The display turns dark during play and disappears when the unit is turned off. It reappears momentarily if a button is pressed. While using this mode, the standby power consumption can be reduced.

Screen Saver
This is to prevent burn-in on the screen.
- When this is set to "On", the masked-off area on the screen becomes grey.
  [Only when connecting with an HDMI cable or a component video cable and "HDMI Video Format" (➡ 89) is set to any other mode than "576p/480p", or "Component Resolution" (➡ 89) is set to "720p" or "1080i"]

[On]   If there is no operation for a while, the displayed screen switches to the other states automatically.
   – When the DIRECT NAVIGATOR, TV Guide, Timer recording list, Copying list, DELETE Navigator or FUNCTION menu is displayed, the display on the screen is not displayed.
   – When Music is played, the display returns to the screen saver mode. (Playback continues.)
   – When still pictures are shown (except for slideshows), the display returns to the DIRECT NAVIGATOR screen.
   – The display returns to the screen saver mode when it is paused by the Pause Live TV. (Pause status will continue.)

[Off]

Teletext
Select the Teletext display mode. (➡ 20)

[TOP (FASTEXT)]

[List]

Connection

(All factory default settings are indicated with underlined text.)
Depending on the connected equipment, some items may be shaded in grey on the display and cannot be selected, or you may not be able to change the settings.

TV Aspect
Set to match the type of television connected.

[16:9]   When connected to a 16:9 widescreen television.

[Pan&Scan]   When connected to a 4:3 aspect television, side picture is trimmed for 16:9 picture.
The "Pan&Scan" setting may not work and the pictures may be shown in the letterbox style depending on the content.

[Letterbox]   When connected to a 4:3 aspect television, 16:9 picture is shown in the letterbox style.

Aspect for 4:3 Video
To play a 4:3 title, set how to show pictures on a 16:9 widescreen television.

[4:3]   Picture output expands left or right.

[16:9]   Picture is output as original aspect with side panels.

TV System
Change the setting to match the equipment you are connecting with, or to match the title when there are both PAL and NTSC titles on the HDD.

[PAL]   • Select when connecting to a PAL or Multi-system television.
   • Select to record television programmes and PAL input from other equipment.
   • Select when playing a PAL input title recorded on the HDD.

[NTSC]   • Select when connecting to an NTSC television. Television programmes cannot be recorded properly.
   • Select to record NTSC input from other equipment.
   • Select when playing an NTSC input title recorded on the HDD.

Note
- This unit cannot record NTSC signals to discs that already have PAL signal recordings. (However, both types of programmes can be recorded onto the HDD.)
- If "NTSC" has been selected, the TV Guide system cannot be used.
- A disc or title with different "TV System" may not be able to playback while recording or on standby for the timer recording. You will be able to playback by changing the "TV System" settings in that case, but to prevent failure of the timer recording, change back the settings before the recording starts.

To change the setting all at once (PAL⇆NTSC)
While stopped, keep pressing [■] and [▲ OPEN/CLOSE] on the main unit at the same time for 5 or more seconds.

■ **Types of disc or title recorded on HDD for the type of connected TV**
When you use the discs recorded either PAL or NTSC, or playback a title recorded on HDD using PAL or NTSC, refer to this table.
(○: Possible to view, –: Impossible to view)

TV type	Disc/Titles recorded on HDD	Yes/No
Multi-system TV	PAL	○
	NTSC	○
PAL TV	PAL	○
	NTSC	○[*1] (PAL60)
NTSC TV	PAL	–
	NTSC	○[*2]

[*1] Select "PAL60" for "NTSC Video Output" in the Setup menu (➡ 86). If your television is not equipped to handle PAL 525/60 signals the picture will not be shown correctly.
[*2] Select "NTSC" in "TV System".
- When playing back a title recorded on the HDD, ensure that you match the "TV System" setting to the title (PAL or NTSC).

HDMI Connection

• Press [OK] to show the following settings.

HDMI Video Mode
Select "On" when video is output from HDMI AV OUT terminal.

[On]

[Off]   When the equipment such as amplifiers is connected using HDMI cable, and TV is connected to the COMPONENT VIDEO OUT terminal (setup before connecting to the amplifiers.)

HDMI Video Format
You can only select items compatible with the connected equipment. This setting normally does not need to be changed. However if you are concerned about output picture quality, it may be improved by changing the setting.
• To enjoy High Quality Video up-converted to 1080p, you need to connect the unit directly to 1080p compatible HDTV. If this unit is connected to an HDTV through other equipment, it must also be 1080p compatible.

[576p/480p]

[720p]   All images other than 720p will be output as 1080i.

[1080i]

[1080p]   When outputting 1080p signal, we recommend using High Speed HDMI Cables that have the HDMI logo (as shown on the cover) and are less than 5.0 meters to prevent video distortion etc.

[Automatic]   Automatically selects the output resolution best suited to the connected television (1080p, 1080i, 720p or 576p/480p).

• Press and hold [■] and [▶] (PLAY) for more than 5 seconds when the image is disturbed by changing the setting. It will be set to "576p/480p".

HDMI Audio Output

[On]

[Off]   When connected to TV with HDMI cable, and connected to amplifiers not compatible to HDMI with the DIGITAL AUDIO OUT terminal

VIERA Link
Set to use "HDAVI Control" function when connected with an HDMI cable to a device that supports "HDAVI Control".

[On]

[Off]   Select when you do not want to use "HDAVI Control".

Component Resolution
This sets the video output resolution when using the component video terminal.

[576i/480i]   [576p/480p]   [720p]   [1080i]

• If it is set to "720p", images other than "720p" will be output as "1080i".
• Even if you select "720p" or "1080i", the video output resolution is restricted to "576p/480p" when HD contents recorded on this unit, DVD-Video discs, DivX recorded at a rate of 50 fields per second and images via AV1, AV2 or DV input are output from the COMPONENT VIDEO OUT terminals.

Network Settings

(All factory default settings are indicated with underlined text.)

IP Address/DNS Settings (➡ 92)
• Press [OK] to show the following settings.

Connection Test
[--]

IP Address Auto-assignment
[On]   [Off]

IP Address
[---.---.---.---]

Subnet Mask
[---.---.---.---]

Gateway Address
[---.---.---.---]

DNS-IP Auto-assignment
[On]   [Off]

Primary DNS
[---.---.---.---]

Secondary DNS
[---.---.---.---]

Connection Speed Auto-configure
[On]   [Off]

Connection Speed Setting
This is enabled only when "Connection Speed Auto-configure" is turned "Off".

[10BASE half duplex]   [10BASE full duplex]

[100BASE half duplex]   [100BASE full duplex]

Proxy Server Settings (➡ 93)
• Press [OK] to show the following settings.

Initialize
Set the setting of "Proxy Server Settings" back.

Proxy Address
(The initial setting is blank.)

Proxy Port Number
(The initial setting is "0".)

Connection Test
[----]

Network Service (➡ 93)
• Press [OK] to show the following settings.

Network Lock
You can restrict using VIERA CAST.
Follow the on-screen instructions. Enter a 4-digit PIN with the numbered buttons when the PIN setting screen is shown. It will be the common PIN for "DVD-Video Ratings" and "Network Lock".
Do not forget your PIN.

[On]   [Off]

Changing Settings (When "On" is selected)

[Change PIN]

Automatic Volume Control

[On]

[Off]   Select "Off" when the audio is warped while using VIERA CAST.

Picture Zoom

[In]   The picture is enlarged.

[Out]   The picture is reduced.

• Select "Out" when display of the contents is truncated.

Convenient functions

Others

(All factory default settings are indicated with underlined text.)

Automatic Standby
Select how long the unit remains on when it is not being used.

[2 hours]   [4 hours]   [6 hours]   [Off]

Remote Control
Change the remote control code on the main unit and the remote control (the two must match) if you place other Panasonic products close together.

[DVD 1]   [DVD 2]   [DVD 3]

Use "DVD 1", the factory set code, under normal circumstances.
① **Press [▲, ▼] to select the code ("DVD 1", "DVD 2" or "DVD 3") and press [OK].**

To change the code on the remote control
② **While pressing [OK], press and hold the numbered button ([1], [2] or [3]) for more than 5 seconds.**
③ **Press [OK].**

■ When the following indicator appears on the unit's display

The unit's remote control code

Change the code on the remote control to match the main unit's (➡ step ②).

Note
Executing "Shipping Condition" in the Setup menu returns the main unit code to "DVD 1". Change the remote control code to 1 (➡ step ②).

Clock
• Press [OK] to show the following settings.

Automatic Clock Setting
This unit usually obtains time and date information from digital broadcasts.
But, if the time is not set correctly, set it to "Off" and perform "Manual Setting". (➡ below)

[On]   [Off]

Daylight Saving Time
Select time offset from the standard time for Summer Time.
• Normally select "Automatic".
• If there is a gap between displayed time and actual time, set this function.

[Automatic]   [0 hour]   [+1/2 hour]   [+1 hour]

Manual Setting
• Press [OK] to show the following setting.
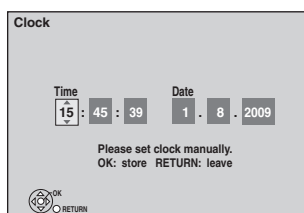
① **Press [◄, ►] to select the item you want to change.**
The items change as follows:

Hour ⟷ Minute ⟷ Second ⟷ Day ⟷ Month ⟷ Year

② **Press [▲, ▼] to change the setting.**
③ **Press [OK] when you have finished the settings.**
The clock starts.

Power Save

[On]   Power consumption is minimized when the unit is turned to standby (➡ 111).

[Off]   It is possible to start quickly from standby mode.

• "Unit's Display" (➡ 88) is fixed with "Automatic" when "Power Save" is set to "On", and is changed to "Bright" when "Power Save" is set to "Off".

System Update (➡ 94)
In order to update this unit's software and to support system changes made by broadcasts, this unit periodically performs software updates.
Press [OK] to show the following settings.

Software Update in Standby

[On]   When you set this unit to standby mode, software updates are downloaded automatically.

[Off]

Software Licence
Information about the software licence is displayed.

DivX Registration
You need this registration code to purchase and play DivX Video-on-Demand (VOD) content (➡ 41).

Initialize
• Press [OK] to show the following settings.

Shipping Condition
All the settings except for the ratings level and ratings PIN etc. return to the factory preset. The timer recording programmes are also cancelled.

[Yes]   [No]

Default Settings
All the settings other than the tuning settings, clock settings, disc language settings, ratings level, ratings PIN, remote control code, and network settings etc. return to the factory presets.

[Yes]   [No]

Television operation

You can configure the remote control TV operation buttons to turn the television on/off, change the television input mode, select the television channel and change the television volume.

1 Point the remote control at the television.
While pressing [⏻ TV], enter the code with the numbered buttons.

e.g.,   01: [0] ➡ [1]   10: [1] ➡ [0]

Manufacturer and Code No.

Brand	Code	Brand	Code
Panasonic	01/02/03/04	METZ	05/28
AIWA	35	MITSUBISHI	05/19/20/47
AKAI	27/30	MIVAR	24
BEJING	33	NEC	36
BEKO	05/71/72/73/74	NOBLEX	33
BENQ	58/59	NOKIA	25/26/27/60/61
BP	09	NORDMENDE	10
BRANDT	10/15	OLEVIA	45
BUSH	05	ONWA	30/39/70
CENTREX	66	ORION	05
CHANGHONG	69	PEONY	49/69
CURTIS	05	PHILCO	41/48/64
DAEWOO	64/65	PHILIPS	05/06/46
DESMET	05	PHONOLA	05
DUAL	05	PIONEER	37/38
ELEMIS	05	PROVIEW	52
FERGUSON	10/34	PYE	05
FINLUX	61	RADIOLA	05
FISHER	21	SABA	10
FUJITSU	53	SALORA	26
FUNAI	63/67	SAMSUNG	32/42/43/65/68
GOLDSTAR	05/50/51	SANSUI	05
GOODMANS	05	SANYO	21/54/55/56
GRADIENTE	36	SCHNEIDER	05/29/30
GRUNDIG	09	SEG	05/69/75/76/77/78
HIKONA	52	SELECO	05/25
HITACHI	05/22/23/40/41	SHARP	18
INNO HIT	05	SIEMENS	09
IRRADIO	30	SINUDYNE	05
ITT	25	SONY	08
JINGXING	49	TCL	31/33/66/67/69
JVC	17/30/39/70	TELEFUNKEN	10/11/12/13/14
KDS	52	TEVION	52
KOLIN	45	TEX ONDA	52
KONKA	62	THOMSON	10/15/44
LG	05/50/51	TOSHIBA	16/57
LOEWE	07/46	WHITE WESTINGHOUSE	05
MAG	52	YAMAHA	18/41

2 Test by turning on the television and changing channels.

- Repeat the procedure until you find the code that allows correct operation.
- If your television brand is not listed or if the code listed for your television does not allow control of your television, this remote control is not compatible with your television.

Note
- If your television brand has more than one code listed, select the one that allows correct operation.

Child Lock

The Child Lock deactivates all buttons on the unit and remote control. Use it to prevent other people from operating the unit.

Press and hold [OK] and [RETURN ⤴] simultaneously until "X HOLD" appears on the unit's display.

If you press a button while the Child Lock is on, "X HOLD" appears on the unit's display and operation is impossible.

To cancel the Child Lock
Press and hold [OK] and [RETURN ⤴] simultaneously until "X HOLD" disappears.

Convenient functions

Network Settings

These settings are used when you will connect this unit to a network. The connection to the Internet may take time or the Internet may not be connected depending on the connection environment. It is recommended that you use a broadband connection.

∎ Testing the connection
Always test the connection when a LAN cable is connected or when new "IP Address/DNS Settings" have been made.

1 **Press [FUNCTION MENU].**
2 **Press [▲, ▼] to select "Others" and press [OK].**
3 **Press [▲, ▼] to select "Setup" and press [OK].**
4 **Press [▲, ▼] to select "Network Settings" and press [OK].**
5 **Press [▲, ▼] to select "IP Address/DNS Settings" and press [OK].**

```
IP Address / DNS Settings

Connection Test                          ——
IP Address Auto-assignment               On
IP Address                               ---. ---. ---. ---
Subnet Mask                              ---. ---. ---. ---
Gateway Address                          ---. ---. ---. ---
DNS-IP Auto-assignment                   On
Primary DNS                              ---. ---. ---. ---
Secondary DNS                            ---. ---. ---. ---
Connection Speed Auto-configure          On
Connection Speed Setting                 ——
MAC Address: 00-0b-97-e6-7a-ae
                    OK
                    RETURN
```

6 **Press [▲, ▼] to select "Connection Test" and press [OK].**

"Testing": The test is in progress.
"OK": The connection is completed.
"Failed": Please check the connection and settings.

> **Note**
> • Perform the "Connection Test" also when any change was made to the "IP Address/DNS Settings".

• If the connection test fails, it may be necessary to set the MAC address of this unit at the router side. The MAC address can be displayed by selecting "Network Settings" and "IP Address/DNS Settings" in steps 1-5 (➡ above).

∎ Setting the IP address
In most cases, default settings can normally be used without making any changes.
Set the IP address only when the router has no DHCP server functions or when the router's DHCP server function is disabled.

After performing steps 1–5 (➡ above)

6 **Press [▲, ▼] to select "IP Address Auto-assignment" and press [◄, ►] to select "Off".**
7 **Press [▲, ▼] to select "IP Address", "Subnet Mask" or "Gateway Address" and press [OK].**
8 **Enter numbers with the numbered buttons and press [OK].**
   • After checking the specifications for your broadband router, enter each number.
   If the number is unknown, then check the number of other devices such as personal computers connected via a LAN cable. Assign a different number from those of other devices for "IP Address" and the same number for others.
   • If a wrong number is entered, then press [DEL].

```
IP Address




Please input IP Address and press "OK".
The IP address will be cleared by pressing
"OK" when there is no number input.


   192  .  1   .       .

   0  - 9  Number
```

9 **Press [◄, ►] to select "Yes" and press [OK].**

> **Note**
> • The numeric input range is between 0 and 255.

∎ Setting the DNS-IP
In most cases, default settings can normally be used without making any changes.
When setting an assigned DNS server from your Internet service provider, perform the following settings.

After performing steps 1–5 (➡ left)

6 **Press [▲, ▼] to select "DNS-IP Auto-assignment" and press [◄, ►] to select "Off".**
7 **Press [▲, ▼] to select "Primary DNS" or "Secondary DNS" and press [OK].**
8 **Enter numbers with the numbered buttons and press [OK].**
   • Follow the instructions given by your Internet service provider and enter the numbers. If the number is unknown, then check the number of other devices such as personal computers connected via a LAN cable and assign the same number.
   • If a wrong number is entered, then press [DEL].
9 **Press [◄, ►] to select "Yes" and press [OK].**

> **Note**
> • The numeric input range is between 0 and 255.

∎ Setting the connection speed
When the connection test results in "Failed" after the IP and DNS-IP addresses are assigned, perform the following settings.

After performing steps 1–5 (➡ left)

6 **Press [▲, ▼] to select "Connection Speed Auto-configure" and press [◄, ►] to select "Off".**
7 **Press [▲, ▼] to select "Connection Speed Setting" and press [◄, ►] to select a connection speed.**
   • Select a connection speed in accordance with the environment of the network connected.
   • When the settings are changed, the network connection may be disabled depending on the device.

■ Setting the proxy server

In most cases, default settings can normally be used without making any changes.

Please use this setting when instructed to by your Internet service provider.

• Set the proxy server only after the connection test is completed properly.

1 Press [FUNCTION MENU].

2 Press [▲, ▼] to select "Others" and press [OK].

3 Press [▲, ▼] to select "Setup" and press [OK].

4 Press [▲, ▼] to select "Network Settings" and press [OK].

5 Press [▲, ▼] to select "Proxy Server Settings" and press [OK].
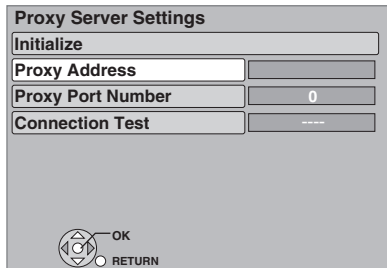
Proxy Server Settings	
Initialize	
Proxy Address	
Proxy Port Number	0
Connection Test	----

OK
RETURN

6 Press [▲, ▼] to select "Connection Test" and press [OK].

Proxy Server Settings	
Initialize	
Proxy Address	
Proxy Port Number	0
Connection Test	----

OK
RETURN
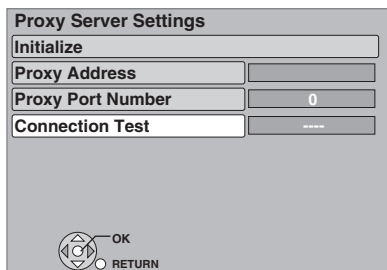
"Testing": The test is in progress.
"OK": The connection is completed.
Press [RETURN ⏎] to exit.
"Failed": Please check the connection and settings.

7 Press [▲, ▼] to select "Proxy Address" and press [OK].

(➡ 72, Entering text)

After the input of "Proxy Address" is completed

8 Press [▲, ▼] to select "Proxy Port Number" and press [OK].

9 Enter numbers with the numbered buttons and press [OK].

Proxy Port Number
Please input HTTP Proxy Server Port Number and press "OK". The number will be set to "0" by pressing "OK" when there is no number input.
0
[0] - [9] Number
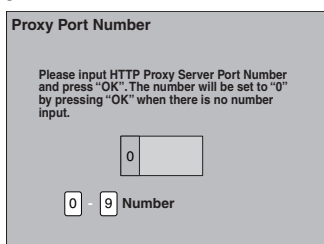
10 Press [◄, ►] to select "Yes" and press [OK].

To set back to default setting

After performing steps 1–5 (➡ above)
① Press [▲, ▼] to select "Initialize" and press [OK].
② Press [◄, ►] to select "Yes" and press [OK].

■ Setting the network service (VIERA CAST)

1 Press [FUNCTION MENU].

2 Press [▲, ▼] to select "Others" and press [OK].

3 Press [▲, ▼] to select "Setup" and press [OK].

4 Press [▲, ▼] to select "Network Settings" and press [OK].

5 Press [▲, ▼] to select "Network Service" and press [OK].

Network Service	
Network Lock	Off
Automatic Volume Control	On
Picture Zoom	In

OK
RETURN
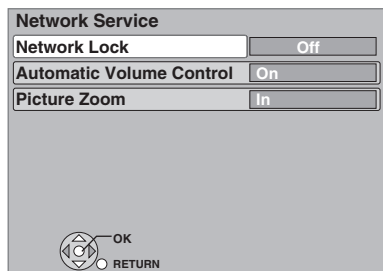
• Network Lock (➔ 89)
• Automatic Volume Control
  Select "On", the volume is controlled by this unit automatically. If you want to enjoy the original volume, set it to "Off".
• Picture Zoom
  Select "In" to enlarge the picture, or select "Out" to reduce the picture.

Software (Firmware) Update

Software of this unit can be updated automatically by following method.

- From broadcasts
- From Internet [network connection and setting is required. (➡ 92, 98)]

Update of the software is done when it is in standby mode.
Once the new software is found, it will start the download of the software, and then the update.
Download of the software will start automatically when the power of this unit is turned off or when it is 3 a.m.

- The time it takes to update depends on the connection.
  – For Broadcast: About 30 minutes to 1 hour
  – For Internet: About 1 hour
    (It may take longer than specified above to download because the download time differs depending on the network environment. It is recommended to be used in a broadband environment.)

If you do not want to perform the software update during the standby mode, set "Software Update in Standby" in the Setup menu to "Off". (➡ 90)

■ If a software update is available, a notification is displayed.

For broadcast

1 TEN HD		10:30	All DVB Channels
Coronation street			Select Favourites ▭
9:00 - 11:00	◄ Now ►		Software update ▭
Rating:PG		🖭 🗐 Ⅰ/Ⅱ	

Software update

- Following screen is displayed when "Red" button is pressed.

For Internet

New software version has been found.
The software will be updated automatically after this unit is switched to standby.
Do not disconnect the AC mains lead.
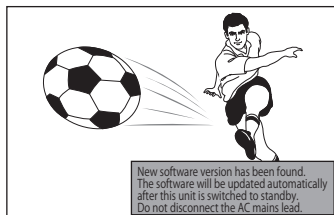
- Update of the software will start when the power is turned off.

■ The unit's display during the update

- "SW-DL"   : Software is downloading. Download will stop when the power is turned on, or the timer recording starts.
- "START"ᵡ   : Update of the software will start once the download is completed.
- "UPD □/□"ᵡ   : Software is updating.
- "FINISH"   : Updated of the software has completed.

ᵡ You cannot operate the unit until the update is complete. Removing the AC mains lead while the update is in progress may damage the unit.

Note
- If the timer recording is scheduled within the following time at the start of the download, the download will not be executed.
  – For broadcast: Within 1 hour
  – For Internet: Within 1 hour
- If downloading on this unit fails or this unit is not connected to the Internet, then you can download the latest software from the following website and burn it to a CD-R to update the software.
  http://panasonic.net/support/

Additional connections

Connecting a television with S VIDEO terminals

The S VIDEO OUT terminal achieves a more vivid picture than the VIDEO OUT terminal. (Actual results depend on the television.)
- Connect to terminals of the same colour.
- Supplied Audio/Video cable can also be used as an alternative for Audio cable without connecting the video connector (yellow).

Television's rear panel

AUDIO IN
R   L   VIDEO IN   S VIDEO IN

S Video cable

Audio cable

This unit's rear panel
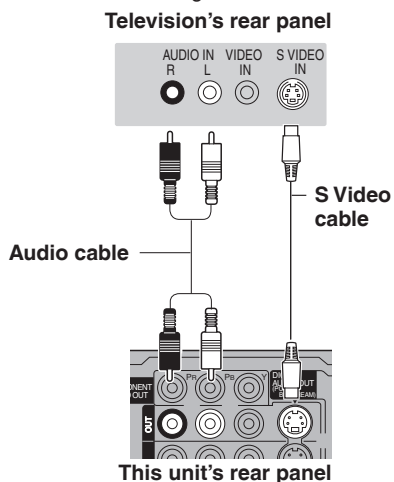
Connecting a television with COMPONENT VIDEO terminals

Television's rear panel

AUDIO IN
R   L   COMPONENT VIDEO IN
Pr   Pb   Y

Audio cable   **Component video cable**

LAN
10BASE-T/
100BASE-TX

HDMI
AV OUT

This unit's rear panel
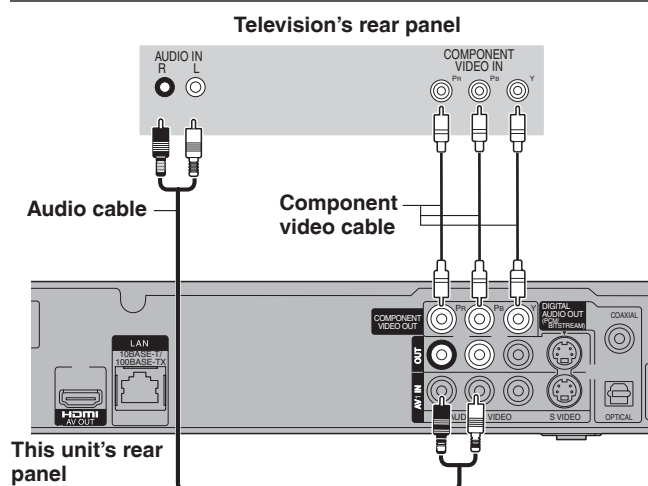
COMPONENT VIDEO terminals can be used for either interlace or progressive output (➡ 114) and provide a purer picture than the S VIDEO OUT terminal.
- Connect to terminals of the same colour.
- Supplied Audio/Video cable can also be used as an alternative for Audio cable without connecting the video connector (yellow).

| Required setting |

"Component Resolution" setting in the Setup menu (➡ 89)

If you have a regular television (CRT: cathode ray tube)
Progressive output may cause some flickering, even if it is progressive compatible. Set "HDMI Video Mode" in the Setup menu to "Off" and "Component Resolution" in the Setup menu to "576i/480i" if you are concerned about it (➡ 89). This is the same for multi system televisions using PAL mode.

CRT

DO NOT
Progressive output

COMPONENT VIDEO OUT
This unit

COMPONENT VIDEO IN
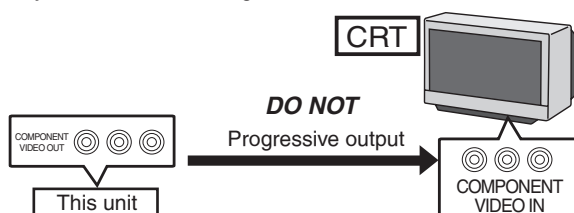
Connecting a stereo amplifier

- Connect to terminals of the same colour.
- Supplied Audio/Video cable can also be used as an alternative for Audio cable without connecting the video connector (yellow).

Amplifier's rear panel

AUDIO IN
R   L

Audio cable

This unit's rear panel

COMPONENT VIDEO OUT   DIGITAL AUDIO OUT (PCM/BITSTREAM)
OUT
AV IN
R-AUDIO-L   VIDEO   S VIDEO
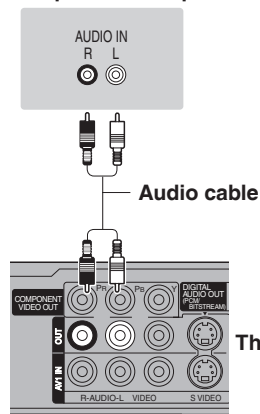
Connecting an amplifier with a digital input terminal

| Required setting |

"Digital Audio Output" in the Setup menu (➡ 86)
- When this unit is connected to an amplifier with an optical digital audio cable or coaxial cable and connected to a television with an HDMI cable, you can enjoy the highest quality of audio from the disc by setting "HDMI Audio Output" to "Off" in the Setup menu (➡ 89). In this case audio is only output from the amplifier not the television.
- Before purchasing an optical digital audio cable (not included), check the terminal shape of the connected equipment.

■ With OPTICAL
- You cannot use DTS Digital Surround decoders not suited to DVD.

OPTICAL IN

Amplifier's rear panel

Insert the cable so its shape fits correctly into the terminal.

Optical digital audio cable
Do not bend sharply when connecting.

This unit's rear panel

■ With COAXIAL

COAXIAL IN

Amplifier's rear panel

Coaxial cable

This unit's rear panel

Convenient functions

Reference
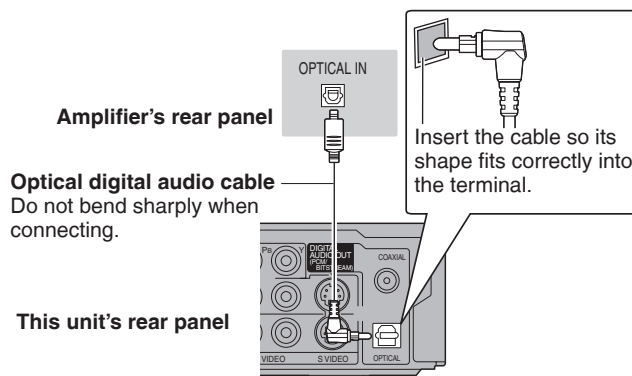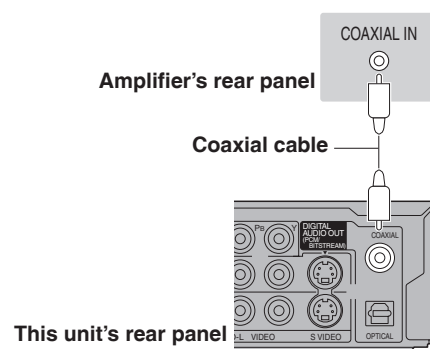
Connecting with an HDMI compatible television and receiver

When connected to an HDMI compatible unit, an uncompressed digital audio and video signal is transmitted. You can enjoy high quality, digital video and audio with just one cord. When connecting to an HDMI-compatible HDTV (High Definition Television), the output can be switched to 1080p, 1080i or 720p HD video.
- This unit incorporates HDMI™ (V.1.3a with Deep Colour, x.v.Colour™) technology (➡ 114, 115).
- Video sources converted to 1920×1080 resolution, while of high quality, will exhibit somewhat lower subjective image resolution than true, native 1080p full-HD sources. See dealer for details.
- Please use High Speed HDMI Cables that have the HDMI logo (as shown on the cover).
- When outputting 1080p signal, please use HDMI Cables 5.0 meters or less.

Regarding VIERA Link "HDAVI Control™" function
When connecting with a Panasonic TV (VIERA) or a receiver equipped with the "HDAVI Control" function, linked operations would be possible.
[➡ 74, Linked operations with the TV (VIERA Link "HDAVI Control™")]
- **Non-HDMI-compliant cables cannot be utilised.**
- **It is recommended that you use Panasonic's HDMI cable.**
   Recommended part number:
   RP-CDHG10 (1.0 m), RP-CDHG15 (1.5 m), RP-CDHG20 (2.0 m), RP-CDHG30 (3.0 m), RP-CDHG50 (5.0 m), etc.

Television's rear panel

HDMI IN

HDMI cable

HDMI IN　HDMI OUT　**Receiver's rear panel**

Required setting
- Set "HDMI Video Mode" and "HDMI Audio Output" to "On" (➡ 89).
   (The default setting is "On".)

HDMI cable

HDMI AV OUT

This unit's rear panel

Note
- If you are connecting to a TV that is only compatible with 2 channel audio output, audio with 3 channels or more will be down mixed (➡ 114) and output as 2 channels, even if connecting with an HDMI cable. (Some discs cannot be down mixed.)
- You cannot connect this unit to DVI devices that are incompatible with HDCP.
   For units compatible with HDCP (High-Bandwidth Digital Content Protection) copyright protection that are equipped with a digital DVI input terminal (PC monitors, etc.):
   Depending on the unit, images may not display properly or at all when connecting with a DVI/HDMI switching cable. (Audio cannot be output.)

Connecting an Analogue television and VCR

To household mains socket
(AC 220 to 240 V, 50 Hz)

Television's rear panel

VHF/UHF
RF IN

AUDIO IN   VIDEO IN
R   L

To the aerial

AC mains lead
(included)
Connect only after all other
connections are complete.

6

1

**Aerial
cable**

Other connections
(➡ 16, 95)

5

**Audio/video
cable**
(included)

RF OUT   RF IN

LAN
10BASE-T/
100BASE-TX

HDMI
AV OUT

AC IN ~

COMPONENT
VIDEO OUT

PB   PR

DIGITAL
AUDIO OUT
PCM
BITSTREAM

COAXIAL

OUT

AV IN

R-AUDIO-L   VIDEO   S VIDEO

OPTICAL

This unit's rear panel   **Cooling fan**

2

**RF coaxial
cable**
(included)

3

4

**Audio/video
cable**

**RF coaxial
cable**

RF OUT

VHF/UHF
RF IN

R   L
AUDIO OUT   VIDEO OUT

VCR's rear panel

Connecting a Digital television and VCR

To the aerial

**Aerial
cable**

Splitter

To household mains socket
(AC 220 to 240 V, 50 Hz)

Television's rear panel

**Aerial
cable**

VHF/UHF
RF IN

AUDIO IN   VIDEO IN
R   L

3

AC mains lead
(included)
Connect only after all other
connections are complete.

6

1

**Aerial
cable**

Other connections
(➡ 16, 95)

5

**Audio/video
cable**
(included)

RF OUT   RF IN

LAN
10BASE-T/
100BASE-TX

HDMI
AV OUT

AC IN ~

COMPONENT
VIDEO OUT

PB   PR

DIGITAL
AUDIO OUT
PCM
BITSTREAM

COAXIAL

OUT

AV IN

R-AUDIO-L   VIDEO   S VIDEO

OPTICAL

This unit's rear panel   **Cooling fan**

2

**RF coaxial
cable**
(included)

4

**Audio/video
cable**

**VCR's
rear panel**

RF OUT

VHF/UHF
RF IN

R   L
AUDIO OUT   VIDEO OUT

Connect the unit directly to the television
If you connect the unit through an AV selector or video cassette
recorder to the television, video signal will be affected by copyright
protection systems and the picture may not be shown correctly.

When connecting to a television with a built-in VCR
Connect to the input terminals on the television side if there are both
television and VCR input terminals.

DO NOT

Television
↑
VCR
↑
This unit

Network connection

Following function will be available when this unit is connected to the network.
• This document is assuming that you already have a broadband connection.
• This connection is not necessary if following functions are not to be used.

Enjoying VIERA CAST™	You can access a selection of Internet services from the Home screen with VIERA CAST, for example, YouTube, Picasa Web Albums. (Current as of June 2009) (➡ 73) • VIERA CAST requires a broadband Internet connection. Dial-up Internet connections cannot be used.
Automatically acquire the title of the CD	Automatically acquire the title of the CD or the information about the artist. (➡ 70)
Update the software of this unit	Automatically update the software of this unit. (➡ 94) • Update of the software can be done from the broadcast too.

Internet

This unit's rear panel

Straight LAN cable

WAN

4 3 2 1 LAN

LAN

Hub or broadband router

Telecommunications equipment (modem, etc.)

• When your communication equipment (modem, etc.) has no broadband router functions: Connect a broadband router. When your communication equipment (modem, etc.) has broadband router functions but there are no vacant ports: Connect a hub.
• Use a router that supports 10BASE-T/100BASE-TX.

• Make the necessary settings in "Network Settings" after connecting. (➡ 92)

Note
• Refer to the operating instructions for the connected device.
• It may not work properly depending on the equipment or environment used.
• Depending on the contract with the provider, you may not be able to connect multiple numbers of terminals such as this unit or computers, or an additional fee might be required.
• Use only category 5 straight LAN cables (STP) when connecting to peripheral devices.
• When operating the VIERA CAST, use high-speed Internet service no less than 1.5 Mbps for SD (Standard Definition) and 6 Mbps for HD (High Definition) picture quality by your local broadband company.
  – If using slow Internet connection, the video may not be displayed correctly.
• Inserting any cable other than a LAN cable in the LAN terminal can damage the unit.

Operations that can be performed simultaneously

Operations that can be performed while recording or copying a title

(○: Possible, –: Impossible)

	Playback of HDD	Playback of discs	Playback of still pictures	Playback of music recorded on HDD
While recording to HDD in DR mode	○	○	–	○
While recording from external equipment to HDD (in XP, SP, LP, EP and FR mode)	○	○※	–	○
While recording from DV input	–	–	–	–
While copying in normal speed mode	–	–	–	–
While copying in high speed mode [With finalising or creating Top Menu (+RW)]	–	–	–	–
While copying in high speed mode [Without finalising or creating Top Menu (+RW)]	○	–	–	–

※ AVCHD It cannot playback.
• Simultaneous operation is not possible while executing "DV Automatic Recording" or "Recording via AV2 input".

Starting of the timer recording while executing other operation

Starting of timer recording possible during the following operations	Starting of timer recording not possible during the following operations
• Recording the title※1 • Playing the title※2 • Editing the title • Copying a title in high speed mode (without finalising or creating Top Menu) – Only 1 programme can be recorded. • Executing "DV Automatic Recording"※3 • Executing "Recording via AV2 input"※3 • Executing Pause Live TV※1 ※1 Executing operation will terminate when 2 programmes simultaneous recording cannot be performed. ※2 Playback of disc stops when a timer recording mode other than DR has started. ※3 Executing operation will be terminated.	• Copying a title in normal speed mode • Copying a title in high speed mode (with finalising or creating Top Menu) • Copying HD Video (AVCHD format) • Editing still pictures or music • Copying still pictures • Copying music • Formatting • Finalising/Creating Top Menu (+RW)

Frequently asked questions

Refer to the following items if you have any doubts about unit operations.

Set up

Which aerial is suitable for receiving digital terrestrial broadcasts?

➢ You can use your current aerial. However, depending on the area where you live, a new aerial may be necessary. Consult your local TV aerial installer.

Can this unit receive or record High Definition (HD) broadcasts?

➢ Yes, this unit can receive and record High Definition (HD) broadcasts. Record in DR recording mode.

What do I need to play multi channel surround sound?

➢ Connect the appropriate amplifier/receiver to the HDMI AV OUT terminal, the DIGITAL AUDIO OUT terminal (OPTICAL, COAXIAL). (➡ 95, 96)

Are the headphones and speakers directly connected to the unit?

➢ You cannot directly connect them to the unit. Connect through the amplifier etc. (➡ 95, 96)

My television has S VIDEO IN terminal, COMPONENT VIDEO IN terminals and HDMI IN terminal. Which should I connect with?

➢ The different levels of picture quality input are listed below in order from highest to lowest. HDMI IN →COMPONENT VIDEO IN →S VIDEO IN →VIDEO IN. However, it will take longer for the picture output to start up when this unit is connected with the HDMI IN terminal.

Disc

Can I play DVD-Video bought in another country?

➢ Playback of the following discs is not possible.
 – DVD-Video discs that do not include region "4" or "ALL". Refer to the disc's jacket for more information. (➡ Cover)

Can DVD-Video that does not have a region number be played?

➢ The region management information for DVD-Video indicates that the disc conforms to industry standards. You cannot play discs that do not conform to industry standards or do not have a region number.

Please tell me about disc compatibility with this unit.

➢ Refer to "HDD and disc information". (➡ 6–10)

Recording

Can I record from a commercially purchased video cassette or DVD?

➢ Most commercially sold video cassettes and DVD are copy protected; therefore, recording is usually not possible.

Can the disc recorded with this unit play on other equipment?

➢ Refer to "Play on other players" in "HDD and disc information". (➡ 9)

Can I high speed copy to a disc?

➢ Yes, you can. (But you may not high speed copy depending on the disc to copy or the title.) (➡ 46)
 Depending on the disc type, the maximum speed varies.

➢ Title in DR mode on the HDD can be copied to disc at high speed if the recording mode is converted using "DR File Conversion" (➡ 44). (But you may not high speed copy depending on the disc to copy or the title.) (➡ 46)

Is it possible to copy to the disc, SD card or USB memory after copying HD video (AVCHD format) to the HDD?

➢ It can be copied to the disc.
 – It will be copied with SD quality. (It cannot be copied as it is in HD picture quality.)
➢ It cannot be copied to SD card or USB memory.

TV Guide

Is it possible to programme a recording, with a start and end time that are different from the TV Guide system?

➢ You can manually change the start and end time of programmes in the Timer Recording menu. (➡ 23)

Can I receive TV Guide system data via a connected satellite receiver or a Set Top Box?

➢ No, only via the built-in tuner.

How can I cancel a timer programming?

➢ Press [PROG/CHECK] and select the desired entry and then press [DEL]. (➡ 34)

What happens when I unplug the unit from the household mains socket?

➢ The TV Guide data will not be updated.
➢ If the unit is disconnected from the household mains socket for a longer period of time, the TV Guide data will be lost.
➢ Clock setting will be erased and timer recording will not work.

USB

What can or cannot be done using the USB port on this unit?

➢ You can play DivX, MP3 or still picture (JPEG) files on a USB memory. (➡ 40, 58, 65)
➢ You can copy still pictures (JPEG) files on a USB memory to the HDD. (➡ 62)
➢ You can copy MP3 files on a USB memory to the HDD. (➡ 70)
➢ You can connect a video equipment and copy SD Video to the HDD or DVD-RAM. (➡ 57)
➢ You can connect a video equipment and copy HD Video to the HDD. (➡ 56)
➢ Data on the HDD or a disc cannot be transferred to a USB memory.
➢ Data on a USB memory cannot be edited or a USB memory cannot be formatted on this unit.
➢ Some USB memories cannot be used with this unit. (➡ 11)

Music

What will happen if I try to record the same CD multiple times?

➢ New album will be made following the existing album.

Can I transfer the music tracks from HDD to the disc or USB memory?

➢ No, you cannot.

Regarding Frequently asked questions for copying (➡ 48)

Language code list Enter the code with the numbered buttons.

Abkhazian: 6566	Catalan: 6765	Gujarati: 7185	Lingala: 7678	Rhaeto-Romance: 8277	Tamil: 8465
Afar: 6565	Chinese: 9072	Hausa: 7265	Lithuanian: 7684		Tatar: 8484
Afrikaans: 6570	Corsican: 6779	Hebrew: 7387	Macedonian: 7775	Romanian: 8279	Telugu: 8469
Albanian: 8381	Croatian: 7282	Hindi: 7273	Malagasy: 7771	Russian: 8285	Thai: 8472
Amharic: 6577	Czech: 6783	Hungarian: 7285	Malay: 7783	Samoan: 8377	Tibetan: 6679
Arabic: 6582	Danish: 6865	Icelandic: 7383	Malayalam: 7776	Sanskrit: 8365	Tigrinya: 8473
Armenian: 7289	Dutch: 7876	Indonesian: 7378	Maltese: 7784	Scots Gaelic: 7168	Tonga: 8479
Assamese: 6583	English: 6978	Interlingua: 7365	Maori: 7773	Serbian: 8382	Turkish: 8482
Aymara: 6589	Esperanto: 6979	Irish: 7165	Marathi: 7782	Serbo-Croatian: 8372	Turkmen: 8475
Azerbaijani: 6590	Estonian: 6984	Italian: 7384	Moldavian: 7779	Shona: 8378	Twi: 8487
Bashkir: 6665	Faroese: 7079	Japanese: 7465	Mongolian: 7778	Sindhi: 8368	Ukrainian: 8575
Basque: 6985	Fiji: 7074	Javanese: 7487	Nauru: 7865	Singhalese: 8373	Urdu: 8582
Bengali; Bangla: 6678	Finnish: 7073	Kannada: 7578	Nepali: 7869	Slovak: 8375	Uzbek: 8590
	French: 7082	Kashmiri: 7583	Norwegian: 7879	Slovenian: 8376	Vietnamese: 8673
Bhutani: 6890	Frisian: 7089	Kazakh: 7575	Oriya: 7982	Somali: 8379	Volapük: 8679
Bihari: 6672	Galician: 7176	Kirghiz: 7589	Pashto, Pushto: 8083	Spanish: 6983	Welsh: 6789
Breton: 6682	Georgian: 7565	Korean: 7579	Persian: 7065	Sundanese: 8385	Wolof: 8779
Bulgarian: 6671	German: 6869	Kurdish: 7585	Polish: 8076	Swahili: 8387	Xhosa: 8872
Burmese: 7789	Greek: 6976	Laotian: 7679	Portuguese: 8084	Swedish: 8386	Yiddish: 7473
Byelorussian: 6669	Greenlandic: 7576	Latin: 7665	Punjabi: 8065	Tagalog: 8476	Yoruba: 8979
Cambodian: 7577	Guarani: 7178	Latvian, Lettish: 7686	Quechua: 8185	Tajik: 8471	Zulu: 9085

On the television
Page

Authorisation Error.	• You are trying to play the DivX VOD content that was purchased with a different registration code. You cannot play the content on this unit. (DivX)	41
Cannot finish recording completely.	• The programme was copy-protected. • The HDD or disc may be full. • The maximum number of programme has been exceeded.	— — 28
Cannot play. **Incompatible TV system setting!**	• You tried to play a title recorded using a different encoding system from that of the TV system currently selected on the unit. Alter the "TV System" setting on this unit to suit.	88
Cannot record to the disc. **Cannot format.**	• The disc may be dirty or scratched.	15
Cannot play on this unit.	• You tried to play a non-compatible image. • Turn the unit off and re-insert the USB memory or the SD card.	112 15
Cannot record. Disc is full. **Cannot record. Exceeds maximum number limit of titles allowed.**	• `HDD` `RAM` `-RW(V)` `+RW` Create space by deleting any unnecessary titles. [Even if you delete recorded content from the DVD-R, DVD-R DL, +R or +R DL there is no increase in disc space. Available space on DVD-RW (DVD-Video format) and +RW increases only when the last recorded title is deleted.] • Use a new disc.	24, 43, 81, 85 —
No Disc	• The disc may be upside down.	15
No folders.	• There is no compatible folder in this unit.	113
No SD CARD **No valid SD card.**	• The card is not inserted. If this message is displayed with a compatible card already inserted, turn off the unit, remove and then re-insert the card. • The card inserted is not compatible or the card format does not match.	15 11
Not enough space in the copy destination.	• Create space by deleting any unnecessary items. • Delete one or more items registered on the copying list to ensure that "Destination Capacity" is not exceeded.	24, 43, 61, 64, 68, 71, 81, 85 51, 63
The disc is not recordable. **This disc is not formatted properly.**	• The unit cannot record on the disc you inserted. Insert an unfinalised disc. • You inserted an unformatted disc.	— 81
Rental Expired.	• The DivX VOD content has zero remaining plays. You cannot play it. (DivX)	41
⊘ **This operation cannot be performed now.**	• Some operations are unsupported by the unit. – `AVCHD` : During playback, reverse slow-motion or reverse frame-by-frame is not possible.	—
⊘ **This operation is prohibited by this disc.**	• Depending on the disc, you may not be able to perform search or skip when film previews and warning screens are being played back.	—

When removing a recorded disc

`-R` `-R DL` `-RW(V)` `+R` `+R DL`
The following screen appears when you have not processed the disc for play on other equipment.

> **Finalise**
> Finalise the disc to enable playback on other DVD players.
> Note: Recording or Editing is not possible after finalising. This may take up to ◯min.
> Finalise the disc ?
>
> ⊙ Press the REC button to start finalise.
>
> ⏏ Press the OPEN/CLOSE button to exit.
>
> This disc cannot be played on other players without finalising.
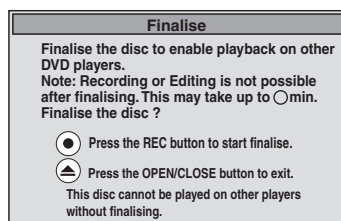
■ To finalise the disc
Press [⊙ REC] on the main unit.
• You cannot stop this process once you have started it.
• If you want to set the background, play menu select or provide a disc name, select "Top Menu" (➡ 82), "Auto-Play Select" (➡ 82) or "Disc Name" (➡ 80) in "DVD Management" before finalising.

■ To open the tray without disc finalisation
Press [⏏ OPEN/CLOSE] on the main unit.

On the unit's display

The following messages or service numbers appear on the unit's display when something unusual is detected during startup and use.

		Page
DVD □ ("□" stands for a number.)	• The remote control and main unit are using different codes. Change the code on the remote control. Press and hold [OK] and the indicated number button at the same time for more than 5 seconds.	90
GUIDE	• TV Guide data is being downloaded.	35
FINISH	• The software update is complete.	94

H□□ or F□□
("□" stands for a service number.)
	• There is something unusual. (The service number displayed after H and F depends on the unit's condition.)
	• Check the unit using the troubleshooting guide. If the service number does not disappear, do the following.
	  1. Disconnect the plug from the household mains socket, wait a few seconds, then reconnect it.
	  2. Press [⏻/l] to turn the power on. (The unit may be fixed.)
	  If the service number does not disappear despite after doing the above, request service from the dealer. Inform the dealer of the service number when requesting service.
		—
		
		104–110

HARD ERR※	• If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.	—
NoERAS	• You cannot delete items on this disc. The disc may be damaged. Use a new disc.	—
NoREAD	• The disc is dirty or badly scratched. The unit cannot record, play or edit. • This message may appear when the lens cleaner has finished cleaning. Press [▲ OPEN/CLOSE] on the main unit to eject the disc.	15 14
NoWRIT	• You cannot write to this disc. The disc may be damaged. Use a new disc.	—
PLEASE WAIT※	• Displayed when the unit is started and turned off. This is not malfunction. • There was a power failure or the AC plug was disconnected while the unit was on. The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.	— —
PROG FULL※	• There are already 32 timer programmes. Delete unnecessary timer programmes.	34
REMOVE	• The USB device is drawing too much power. Remove the USB device.	—
START	• Update of the software is started. You cannot operate the unit until the update is complete.	94
SW-DL	• Software is downloading. Download will stop when the power is turned on, or the timer recording starts.	94

UNFORMAT※	• You inserted an unformatted DVD-RAM, DVD-RW, +RW, an unused +R, +R DL or DVD-RW (DVD-Video format) that has been recorded on other equipment.
	  Format the disc to use it.
	  However all the recorded contents on the disc are deleted.
		81

UNSUPPORT※	• You have inserted a disc the unit cannot play or record on. • You tried to operate with a non-compatible USB memory.	9–10 11
UPD □/□	• The software is being updated. You cannot operate the unit until the update is complete.	94

U59	• The unit is hot.
	  The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears.
	  Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit.
		—

U61	• (When a disc is not inserted) Displays when a malfunction has occurred during recording, playback or copy. This is displayed when the unit is in the recovery process to return to normal operation; it is not broken. Once the display clears you can use the unit again.	—

U72
U73
	• The HDMI connection acts unusually.
	  – The connected equipment is not HDMI compatible.
	  – Please use HDMI cables that have the HDMI logo (as shown on the cover).
	  – The HDMI cable is damaged.
		—

U76	• HDMI cannot be output because you are connected to a model that does not support copyright protection.	—
U77	• Due to the current disc not having authorised copyright information, video output is not performed.	—
U88	• (When a disc is inserted) Displays when there was something unusual detected with the disc while recording, playback or copy. This is displayed when the unit is in the recovery process to return to normal operation; it is not broken. Once the display clears you can use the unit again.	104
U99	• The unit fails to operate properly. Press [⏻/l] on the main unit to switch the unit to standby mode. Now press [⏻/l] on the main unit again to turn the unit on.	—
X HOLD	• The Child Lock function is activated. Press and hold [OK] and [RETURN ↰] at the same time until "X HOLD" disappears.	91

※ The message scrolls on the unit's display.

Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the solutions indicated in the chart do not solve the problem, consult your dealer for instructions.
Updating to the latest software may solve the problem. (➡ 94)

The following do not indicate a problem with this unit:

- Regular disc rotating sounds.
- Poor reception due to atmospheric conditions.
- Image disturbance during search.
- Interruptions in reception due to periodic satellite broadcasting breaks.
- Operations are slow to respond in power save mode.
- Operations do not work due to a poor-quality disc. (Try again using a Panasonic disc.)
- **The unit freezes due to one of its safety devices being activated. (Press and hold [⏻/l] on the main unit for 3 seconds.)**
- When the unit is turned on or off, there may be an unexpected sound. This does not indicate a problem with this unit.

Power

No power.
The unit does not turn on pressing [⏻].
➢ Insert the AC mains lead securely into a known active household mains socket. (➡ 16, 97)

The unit switches to standby mode.
➢ One of the unit's safety devices is activated. Press [⏻/l] on the main unit to turn the unit on.

The power is turned off automatically.
➢ If you connected this unit to an "HDAVI Control" compatible TV with an HDMI cable, this unit will be automatically set to standby mode when the TV is set to standby mode. (➡ 74)

This unit turns off when the TV input is switched.
➢ If connected with an HDAVI Control 4 compatible TV (VIERA) with the "Intelligent Auto Standby" setting activated on the TV, when switching the TV input, the unit will be automatically turned to standby. For details please read the operating instructions of the TV.

Displays

The display is dim.
➢ Change "Unit's Display" in the Setup menu. (➡ 88)

"0:00" is flashing on the unit's display.
➢ Set the clock. (➡ 90)

The time recorded on the disc and the available time shown do not add up.
The displayed time of this unit is different from the actual recording time or MP3 recording time.
➢ Times shown may disagree with actual times.
➢ Available recording space on DVD-RW (DVD-Video format) or +RW increases only when the last recorded title is deleted. It does not increase if other titles are deleted.
➢ Even if you delete recorded content from the DVD-R, DVD-R DL, +R or +R DL, there is no increase in disc space.
➢ More disc space than the actual recording time is used after recording or editing the DVD-R, DVD-R DL, +R or +R DL 200 times or more.
➢ While searching, the elapsed time may not display correctly.

Compared to the actual recorded time, the elapsed time displayed is less.
(Only when recording in NTSC)
➢ The displayed recording/play time is converted from the number of frames at 29.97 frames (equal to 0.999 seconds) to one second. There will be a slight difference between the time displayed and the actual elapsed time (e.g., actual one-hour elapsed time may display as approximately 59 minutes 56 seconds). This does not affect the recording.

Available disc space display is showing different from what was used.
➢ Available disc space display may be different from actual. Varying may be large especially when recorded in DR mode.

"U88" is displayed and the disc cannot be ejected.
➢ The unit is carrying out the recovery process. Do the following to eject the disc.
  1 Press [⏻/l] on the main unit to switch the unit to standby. If the unit doesn't switch to standby, press and hold [⏻/l] on the main unit for about 3 seconds. The unit is forcibly switched to standby.
  2 While the unit is off, press and hold [■] and [CH ∧] on the main unit at the same time for about 5 seconds. Remove the disc.

TV screen and video

Television reception worsens after connecting the unit.

➢ This can occur because the signals are being divided between the unit and other equipment. It can be solved by using a signal booster, available from audio-visual suppliers. If it is not solved by using a signal booster, consult the dealer.

The digital channel information or control panel does not appear.

➢ Select the length of time (3–10 sec.) that "On-Screen Messages" in the Setup menu will be displayed. (➡ 88)
➢ The digital channel information will not appear during playback.
➢ The control panel is only displayed when connected to a TV with "HDAVI Control 2" or later. (➡ 75)

Picture does not appear during timer recording.

➢ Timer recordings work regardless whether the unit is on or off. To confirm the timer recording is going to work properly, turn the unit on.

Screen size is wrong.

➢ Use the television to change the aspect. If your television does not have that function, set "HDMI Video Mode" in the Setup menu to "Off" and "Component Resolution" in the Setup menu to "576i/480i". (➡ 89)
➢ Check the settings for "TV Aspect" in the Setup menu. (➡ 88)
➢ If you connect an HDMI cable, set "Aspect for 4:3 Video" to "16:9" in the Setup menu. (➡ 88)

Pictures do not appear with the HD quality although HD setting was made.

➢ Even if this unit is connected to a TV through COMPONENT VIDEO OUT terminals and the Component Resolution is set to 720p or 1080i, the pictures of HD broadcast output from this unit are output with 576p/480p.

The recorded title is stretched vertically.

➢ 16:9 aspect programmes are recorded in 4:3 aspect in the following cases.
  – **-R** **-R DL** **-RW(V)** If you recorded or copied using "EP" or "FR (recordings 5 hours or longer)" recording mode.
  – If you recorded or copied to a +R, +R DL or +RW.
  – If you recorded in XP, SP, LP, EP, FR mode with "Aspect for Recording" set to "4:3" in the Setup menu.
    When you want to record 16:9 programme in the same aspect, set "Rec for High Speed Copy" to "On", and set "Aspect for Recording" to "16:9". (➡ 85)
  – By setting "Aspect for Recording" to "Automatic", there is a chance that the recording will be made using the wrong aspect. Match the aspect settings to the broadcast when recording. (➡ 85)
  It may be possible to adjust the display mode on the TV. Refer to your television's operating instructions.

There is a lot of after-image when playing video.

➢ Set "HD optimizer" in the Picture menu to "Off". (➡ 77)

When playing DVD-Video using progressive output, one part of the picture momentarily appears to be doubled up.

➢ Set "HDMI Video Mode" in the Setup menu to "Off" and "Component Resolution" in the Setup menu to "576i/480i". This problem is caused by the editing method or material used on DVD-Video, but should be corrected if you use interlace output. (➡ 89)

There is no apparent change in picture quality when adjusted with the Picture menu in the on-screen menus.

➢ The effect is less perceivable with some types of video.

The images from this unit do not appear on the television.
Picture is distorted.

➢ Make sure that the television is connected to the VIDEO OUT terminal, S VIDEO OUT terminal, COMPONENT VIDEO OUT terminals or HDMI terminal on this unit. (➡ 16, 17, 95–97)
➢ Make sure that the television's input setting is correct.
➢ Progressive output is set to on but the connected television is not progressive compatible. Press and hold [■] and [▶/×1.3] on the main unit at the same time for more than 5 seconds to cancel this setting. The setting will change to interlace.
➢ The unit's "TV System" setting differs from the TV system used by the disc now playing. While stopped, keep pressing [■] and [▲ OPEN/CLOSE] on the main unit for 5 or more seconds. The system switches from PAL to NTSC or vice versa. (➡ 88)
➢ When this unit is connected with an HDMI cable, use a disc that matches with this unit's TV system.
➢ Picture may not be seen when more than 4 devices are connected with HDMI cables. Reduce the number of connected devices.

The picture is distorted during play, or video will not play correctly.

➢ You may be playing a TV programme recorded with poor reception or unfavourable weather conditions.
➢ The picture may be distorted or a black screen may appear briefly between recorded titles in the following situations:
  – between titles recorded with different recording modes.
  – between scenes recorded with different aspect ratios.
  – between scenes recorded with different resolutions.
  – between playlist chapters.

Sound

No sound.
Low volume.
Distorted sound.
Cannot hear the desired audio type.

➢ Check the connections and the "Digital Audio Output" settings. Check the input mode on the amplifier if you have connected one. (➡ 16, 17, 86, 95–97)
➢ Press [AUDIO] to select the audio. (➡ 37)
➢ Turn "Sound Effects" in the Sound menu to "Off" in the following cases. (➡ 77)
  – When using discs that do not have surround sound effects such as Karaoke discs.
  – When playing bilingual broadcast titles.
➢ Audio may not be heard when more than 4 devices are connected with HDMI cables. Reduce the number of connected devices.
➢ The sound effects will not work when the bitstream signal is output from the HDMI AV OUT terminal or the DIGITAL AUDIO OUT terminal.
➢ To output audio from a device connected with an HDMI cable, set "HDMI Audio Output" to "On" in the Setup menu. (➡ 89)
➢ Depending on the connected equipment, the sound may be distorted if this unit is connected with an HDMI cable.

Cannot switch audio.

➢ You cannot switch the audio in the following cases.
  – When the recording mode is XP and "Audio Mode for XP Recording" is set to "LPCM". (➡ 87)
  – When "Rec for High Speed Copy" is set to "On". (The default setting is "On"). (➡ 85)
➢ The amplifier is connected using an optical digital audio cable, a coaxial cable or an HDMI cable. You cannot switch the audio if "Digital Audio Output" is set to "Bitstream". Set "Digital Audio Output" to "PCM" or connect using audio cables. (➡ 87, 95)
➢ There are discs for which audio cannot be changed because of how the disc was created.

Operation

Cannot operate the television. The remote control doesn't work.

➢ Change the manufacturer code. Some televisions cannot be operated even if you change the code. (➡ 91)
➢ The remote control and main unit are using different codes. Change the code on the remote control. (➡ 90)

 Press and hold [OK] and the indicated number button at the same time for more than 5 seconds.

➢ The batteries are depleted. Replace them with new ones. (➡ 3)
➢ You are not pointing the remote control at the main unit's remote control signal sensor during operation. (➡ 3)
➢ Coloured glass may obstruct the signal reception/transmission.
➢ Don't place the signal sensor in direct sunlight or in areas that may be subject to sunlight exposure.
➢ Software is updating when "UPD □/□" is displaying on the unit's display. Wait until the update is completed. (➡ 94)
➢ It may be necessary to set the code on the remote control again after changing the batteries. (➡ 90)
➢ It may be necessary to set the manufacturer code again after changing the batteries. (➡ 91)
➢ The child lock function is activated. (➡ 91)

The unit is on but cannot be operated.

➢ Recording drive or playback drive has not been selected properly.
➢ Some operations may be prohibited by the disc.
➢ The unit is hot ("U59" appears on the display). Wait for "U59" to disappear.
➢ One of the unit's safety devices may have been activated. Reset the unit as follows:
  1 Press [⏻/I] on the main unit to switch the unit to standby. If the unit doesn't switch to standby, press and hold [⏻/I] on the main unit for about 3 seconds. The unit is forcibly switched to standby.
    Alternatively, disconnect the AC mains lead, wait one minute, then reconnect it.
  2 Press [⏻/I] on the main unit to switch it on. If the unit still cannot be operated, consult the dealer.

Cannot eject disc.

➢ The unit is recording.
➢ The unit may have a problem. While the unit is off, press and hold [■] and [CH ∧] on the main unit at the same time for about 5 seconds. Remove the disc and consult the dealer. If the Child Lock function is activated, above operation does not work. Cancel the Child Lock function. (➡ 91)

Cannot tune channels.
Cannot download channel presets from the television.

➢ Check the connections. (➡ 16, 97)
➢ You must connect to a VIERA Link (HDAVI Control 3 or later) compatible TV with an HDMI cable to download channel presets.

Startup is slow.

➢ Make sure that "Power Save" is set to "On". (➡ 90)
➢ Startup takes time in the following situations:
  – A disc other than a DVD-RAM is inserted.
  – The clock is not set.
  – Immediately after a power failure or the AC mains lead is connected.
  – When the unit is connected with an HDMI cable.

Recording, timer recording and copying

Cannot record.
Cannot copy.

➢ You can not record to the disc by pressing the [● REC].
➢ You haven't inserted a disc or the disc you inserted cannot be recorded on. Insert a disc the unit can record onto. (➡ 8, 9)
➢ The disc is unformatted. Format the disc. `RAM` `-RW(V)` `+R` `+R DL` `+RW` (➡ 81)
➢ The disc is protected with DVD Management. (➡ 80)
➢ You cannot record when there is not enough space or when the number of titles has reached its limit. Delete unwanted titles or use a new disc. (➡ 24, 43, 81, 85)
➢ `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW` In the following situations, you cannot copy. Delete unnecessary titles from the HDD and then copy. (➡ 24, 43)
  – If there is not enough space available on the HDD (If you will copy titles from the HDD to a blank disc and fill the entire disc, HDD disc space equivalent to 4 hours of SP mode recording is necessary)
  – If the number of recorded titles and the number of titles to be copied has exceeded 499
➢ You cannot record and copy on finalised discs. However, you can record and copy again if you format DVD-RW.
➢ Due to peculiarities of DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW you may be unable to record onto or edit them if you either insert and remove the disc or switch the unit on and off while a disc is loaded, a total of 30 times.
➢ The discs recorded on this unit may not be recordable on other Panasonic Recorders.
➢ Discs recorded on equipment other than this unit may not be able to be recorded to.
➢ This unit cannot record NTSC signals to discs that already have PAL signal recordings. (However, both types of programmes can be recorded onto the HDD.) Play of discs recorded with both PAL and NTSC on another unit is not guaranteed.
➢ Some broadcasts are copyright protected.

Cannot record from external equipment.

➢ Check that the connection is correct. (➡ 53, 54, 97)
➢ Select the input channel for the equipment you have connected.

Cannot record 2 programmes simultaneously.

➢ It cannot in following conditions.
  – Record 2 programmes from external input
  – When performing high speed copying (1 programme can be recorded to HDD)
  – Recording from DV input, while "Recording via AV2 input"

Timer recording does not work properly.

➢ The timer programme is incorrect or different timer programme times overlap (🕐 is displayed). Correct the programme. (➡ 34)
➢ The programme is not in timer recording standby. (The timer icon "🕐" in the timer recording list is grey.) (➡ 33)
➢ Set the clock. (➡ 90)
➢ The programme information in the TV Guide system may not be correct. It is recommended to modify the start and end times to allow a margin of a few minutes. (➡ 23)

The timer programme remains even after recording finishes.

➢ The timer programme remains if set to daily or weekly. (➡ 23)

A part or whole of a recorded title has been lost.

➢ If there is a power failure or the plug is disconnected from the household mains socket while recording or editing, the title may be lost or the HDD/disc may become unusable. You will have to format the disc (`HDD` `RAM` `-RW(V)` `+RW`) or use a new disc. We cannot offer any guarantee regarding lost programmes or discs. (➡ 81, 85)
➢ If you use Auto Renewal Recording, the old title will be deleted after the new title is recorded. (➡ 33)

Cannot copy to a disc using the high speed mode.

➢ High speed copying cannot be performed depending on the disc or title that is being copied. Refer to "When is high speed copy not possible?" for details. (➡ 48)

When copying, it takes a long time even when high speed mode is selected.

➢ Use a disc that is compatible with high speed recording. Even if the disc is high speed recording compatible, the maximum speed may not be possible due to the condition of the disc.
➢ It takes longer than normal to copy many titles.
➢ You cannot high speed copy to DVD-R titles longer than 6 hours when using other Panasonic DVD Recorders that are not compatible with EP (8 hours) mode recording.

An unusually loud sound is coming from the rotating disc.

➢ When recording or high speed copying to a disc, the sound of the disc rotating may be louder than normal, however, this is not a problem.
➢ If you want copy to perform more quietly, select "Normal (Silent)" in "DVD Speed for High Speed Copy" in the Setup menu (➡ 85).

The quality has dropped when the title in HDD is copied to the disc.

➢ Titles in HD quality (titles recorded in DR, HG, HX, HE, HL mode or titles in AVCHD) will be copied as SD quality when copied to `RAM` `-R` `-R DL` `-RW(V)` `+R` `+R DL` `+RW`.

The DV Automatic Recording function does not work.

➢ If images cannot be recorded or if the recording is aborted, check the connections and DV equipment settings. (➡ 54)
➢ You cannot start recording until the images from the DV equipment appear on the television.
➢ Recording may not be performed as desired if the time codes on the tape in the DV equipment are not successive.
➢ Depending on the equipment, the DV automatic recording may not operate properly.
➢ The audio/video recordings are recorded on other than a DV tape. (➡ 54)

Play

Play fails to start even when [▶] (PLAY) is pressed.
Play starts but then stops immediately.

➢ Insert the disc correctly with the label facing up. (➡ 15)
➢ The disc is dirty. (➡ 15)
➢ You tried to play a blank disc or disc unplayable on this unit. (➡ 10)
➢ You tried to play a +RW that needs to be finalised on the equipment used for recording.
➢ When recording to DVD-RAM using "EP (8 hours)" mode, play may not be possible on DVD players that are compatible with DVD-RAM. In this case use "EP (6 hours)" mode. (➡ 85)
➢ You cannot playback while executing "Recording via AV2 input" or when recording from the DV input.
➢ Make sure that the TV is turned on. If the menu or messages are displayed, follow the on-screen instructions.

Audio and video momentarily pause.

➢ This occurs between playlist chapters.
➢ This occurs between chapters and with partially deleted titles on finalised DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW that have been copied using the high speed mode.
➢ This occurs as scenes change during Quick View.
➢ -R DL +R DL When playing a title recorded on both layers, the unit automatically switches between layers and plays the title in the same way as a normal programme. However, video and audio may momentarily cut out when the unit is switching layers. (➡ 37)

DVD-Video is not played.

➢ You have set a ratings level to limit DVD-Video play. Change this setting. (➡ 85)
➢ Ensure the disc is for the correct DVD-Video region number, and is not defective. (➡ Cover)

Alternative soundtrack and subtitles cannot be selected.

➢ The languages are not recorded on the disc.
➢ You may not be able to use the on-screen menus to change the soundtrack and subtitles on some discs. Use the disc's menus to make changes. (➡ 21)

No subtitles.

➢ Subtitles are not recorded on the disc.
➢ Turn the subtitles on. Set "Subtitles" on the on-screen menu to "On". (➡ 76)

Angle cannot be changed.

➢ Angles can only be changed during scenes where different angles are recorded.

You have forgotten your ratings PIN.
You want to cancel the ratings level.

➢ The ratings level returns to the factory preset. While the disc tray is open, press [DRIVE SELECT] to select the DVD drive, then press and hold [● REC] and [▶/×1.3] on the main unit at the same time for 5 or more seconds ("INIT" will appear on the unit's display).

Image for the Quick View is not smooth.

➢ Image may not be played back smoothly in case of DR mode titles or AVCHD.
➢ This does not work when recording is in XP or FR mode.

The resume play function does not work.

➢ Memorized positions are cancelled when
  – open the disc tray.
  – SD CD USB turn off the power.
(HDD Memorized positions will not be cancelled)

Time Slip, Manual Skip, etc. does not work.
Slow-motion playback does not go reverse.
Reverse frame-by-frame does not work properly.

➢ Time Slip does not work when the unit's "TV System" settings are different from the title recorded on the disc. (➡ 88)
➢ Slow-motion playback in reverse does not work for AVCHD.
➢ AVCHD Reverse frame-by-frame cannot be done.
➢ Frame-by-frame backward for titles that have copied the AVCHD will be reversed in 10 frame units.

It takes time before play starts.

➢ This is normal on DivX video. (DivX)

Picture stops.

➢ Picture may stop if the DivX files are greater than 2 GB. (DivX)

Cannot see the beginning of the title played.

➢ (If connecting to a TV that supports VIERA Link with an HDMI cable)
When [▶] (PLAY) is pressed on this unit's remote control, you may not be able to see the beginning of the title played until the picture is displayed on the TV. Using [|◀◀], return to the beginning of the title.

Edit

Available disc space does not increase even after deleting a title.

➢ Available disc space does not increase after deleting on DVD-R, DVD-R DL, +R or +R DL. (➡ 24)
➢ Disc space increases only when the last recorded title is deleted on DVD-RW (DVD-Video format) and +RW. The disc space does not increase when any other titles are deleted. (➡ 24)

Cannot edit.

➢ You may not be able to edit on the HDD if there is no available space.
Delete any unwanted titles to create empty space. (➡ 24, 43)

Cannot format.

➢ The disc is dirty. Wipe with a damp cloth and then wipe dry. (➡ 15)
➢ You tried formatting a disc that you may not be able to use in this unit. (➡ 81)

Cannot mark the start point or the end point during "Partial Delete" operation.

➢ These operations are not possible with still pictures.
➢ You cannot set points if they are too close to each other. You cannot set an end point before a start point.

Cannot create a playlist.

➢ Creation or editing of playlists cannot be done on this unit.

Still pictures

Cannot display DIRECT NAVIGATOR screen.
➢ This screen cannot be displayed during recording or copy.

Cannot edit or format a card.
➢ Release the card's protection setting. (➡ 11)

The contents of the card cannot be read.
➢ Remove the card from the slot and then insert again. If this does not solve the problem, turn off and turn on the unit again.
➢ The card format is not compatible with the unit. (The contents on the card may be damaged.) This unit is compatible with SD Memory Cards that meet SD Card Specifications FAT12 and FAT16 formats, as well as SDHC Memory Cards in FAT32 format. (➡ 11)
➢ The card contains a folder structure and/or file extensions that are not compatible with this unit. (➡ 113)
➢ You can use SD Memory Cards with capacities from 8 MB to 2 GB and SDHC Memory Cards with capacities from 4 GB to 32 GB.

Copying, deleting and setting protection takes a long time.
➢ When there are a lot of folders and files, it may sometimes take a few hours.
➢ When repeating copying or deleting, it may sometimes take a long time. Format the disc or card. (➡ 81)

Still pictures (JPEG) do not playback normally.
➢ The images that were edited on the PC, such as Progressive JPEG, etc., may not play back. (➡ 112)

Music

Tracks could not be copied to the HDD.
➢ If there are copyright protected tracks such as SCMS restrictions, they will not be copied.
➢ Recording from CDs that do not conform to CD-DA specifications (copy control CDs, etc.) cannot be guaranteed.
➢ Bonus tracks may not be copied.

Title of the newly released CD cannot be acquired.
➢ Title cannot be acquired if the title is not registered in the built-in Gracenote® Database. Connection to the network is necessary to acquire title for the newly released CD. (➡ 98)

ID3 tag of an MP3 file is not completely displayed.
➢ Only the track name and artist name can be displayed with this unit.

USB

The contents of the USB memory cannot be read.
➢ Remove the USB memory from the USB port and then insert again. If this does not solve the problem, turn off and turn on the unit again.
➢ Check that the USB memory is inserted correctly. (➡ 15)
➢ The format of the USB memory or of its contents is not compatible with the unit. (The contents on the USB memory may be damaged.) (➡ 11)
➢ The USB memory contains a folder structure and/or file extensions that are not compatible with this unit. (➡ 113)
➢ USB memories connected using a USB extension cable or a USB hub may not be recognized by this unit.
➢ Some USB memories cannot be used with this unit. (➡ 11)
➢ If inserted during playback, recording or copying etc., the USB memory may not be recognized by this unit.
➢ You can use USB memories with capacities up to 128 GB.

USB memory cannot be operated.
➢ Turn the power of this unit off once, and turn it back on. If it cannot be operated after that, set "VIERA Link" to "Off". (➡ 89)

TV Guide

The TV Guide System does not receive any data.
➢ Check whether the clock is properly set. (➡ 90)
➢ If signal quality is bad (ghost images or limited reception), the TV Guide system may not be able to receive any data.

"No Data" is displayed for some or all stations.
➢ Some stations are not supported by the TV Guide system.
➢ Programme the Timer recording manually. (➡ 23)

The TV Guide information is not displayed properly.
➢ There was a programme change.
Check the current programme, e.g., on the Web site for the TV Guide system provider or station provider.

The TV Guide data transfer was interrupted.
➢ The TV Guide system shows the data that was received up to the interruption.
➢ The programme information may be incomplete.

The TV Guide data is not updated.
➢ Make sure that the time is set correctly. (➡ 90)

Digital broadcast

Digital broadcasts cannot be received.
➢ Digital broadcast may not have started in your region yet.
➢ The aerial may not be pointing in the direction of the TV station, or the direction of the aerial may have changed due to strong winds or vibration. If problem persists consult your local TV aerial installer.

After Auto Tuning only some or no DVB channels are found.
➢ Check to ensure your area is covered by DVB transmissions.
➢ If you live in a unit or apartment, check to ensure the Master Antenna TV (MATV) system is designed for DVB-T reception. Please consult your body corporate.

Picture regularly breaks up on some channels. "No signal" message is displayed.

➢ Check "DVB Signal Condition". If "Signal Quality" or "Signal Strength" are displayed in red or constantly changing, check aerial. If problem persists consult your local TV aerial installer. (➡ 84)

➢ Interference (known as impulse noise) from household appliances such as light switches, fridges etc. may cause picture break up and/or audio distortion. Use a high quality quad shielded coaxial cable fly lead between this unit and antenna wall socket to minimise impulse noise pickup. If problem persists consult your local TV aerial installer.

➢ Check aerial connection.

➢ Adjust the aerial reception with "DVB Manual Tuning" in the Setup menu. (➡ 84)

Picture very infrequently breaks up on some or all channels.

➢ Electrical atmospheric interference caused by local or distant lighting storms or heavy rain with wind in "leafy" locations may cause pictures to break up and audio to mute or distort momentarily.

➢ Impulse noise interference from an infrequently used electrical appliance, or a passing vehicle or lawn mower with a "noisy" ignition system.

VIERA Link

VIERA Link doesn't work.

➢ Check the HDMI cable connection. Check that "HDMI" is displayed on the front display when the power for the main unit is set to On.

➢ Make sure that "VIERA Link" is set to "On". (➡ 89)

➢ Check the "HDAVI Control" settings on the connected device.

➢ Some functions may not work if depending on the version of "HDAVI Control" of the connected equipment. This unit supports "HDAVI Control 4" functions.

➢ If the connection for the equipment connected with HDMI was changed, or if there was a power failure or the plug was removed from the household mains socket, "HDAVI Control" may not work.
In this case, perform the following operations.
1 When the HDMI cable is connected to all equipment with the power on, turn the TV (VIERA) on again.
2 Change the TV (VIERA) settings for the "HDAVI Control" function to off, and then set to on again. (For more information, see the VIERA operating instructions.)
3 Switch the VIERA input to HDMI connection with this unit, and after this unit's screen is displayed check that "HDAVI Control" is working.

The operation on this unit (music playback etc.) is interrupted.

➢ The operation on this unit may be interrupted when you press buttons on the TV remote control that do not work for VIERA Link functions.

To reset this unit

To return all the settings other than the main ones to the factory preset

➢ Select "Yes" in "Shipping Condition" in the Setup menu. All the settings except for the ratings level and ratings PIN etc. return to the factory preset. The timer recording programmes are also cancelled. (➡ 90)

➢ Select "Yes" in "Default Settings" in the Setup menu. All the settings other than the tuning settings, clock settings, disc language settings, ratings level, ratings PIN, remote control code, and network settings etc. return to the factory presets. (➡ 90)

➢ Press and hold [∧ CH] and [∨ CH] on the main unit until the Auto Tuning screen appears. All the settings except for the ratings level, ratings PIN and clock settings etc. return to the factory preset. The timer recording programmes are also cancelled.

To reset the ratings level settings

➢ While the disc tray is open, press [DRIVE SELECT] to select the DVD drive, then press and hold [● REC] and [▶/×1.3] on the main unit at the same time for 5 or more seconds.

To restore the unit if it freezes due to one of the safety devices being activated

➢ Press and hold [⏻/I] on the main unit for 3 seconds. (The settings remain.)

Network

I can't connect to the network.

➢ Has the LAN cable come unplugged? Check that the LAN cable is properly connected. (➡ 98)

➢ Have you plugged in a modular cable for use with a telephone into the LAN terminal on this unit? Connect with a straight LAN cable. (➡ 98)

➢ Is the power for the modem or broadband router turned on? Turn the power on for each device.

➢ Is there a mistake in the network settings? Follow any instructions you may have received from your ISP (Internet Service Provider) and make changes to the settings.

➢ Are the broadband router settings correct? Read the operating instructions for the broadband router.

➢ Is the broadband router and/or modem correctly connected? Check the operating instructions for each device and connect accordingly.

While using my PC, I cannot connect to the network.

➢ Does your Internet Service Provider (ISP) or service contract prevent multiple terminals connecting at the same time? Check the content of your contract.

Other

After performing an update, you can no longer receive broadcasts.

➢ Depending on the content of the update, some settings may have returned to the preset values. Fix the settings again.

Pause Live TV stops.

➢ Pause Live TV from AV1 or AV2 input stops when a timer recording in a recording mode other than DR started.

Specifications

Recording system

DVD-RAM: DVD Video Recording format
DVD-R: DVD-Video format
DVD-R DL (Dual Layer): DVD-Video format
DVD-RW: DVD-Video format
+R
+R DL (Double Layer)
+RW

Recordable discs
DVD-RAM: 2X SPEED (Ver. 2.0),
2-3X SPEED (Ver. 2.1), 2-5X SPEED (Ver. 2.2)
DVD-R (SL): 1X SPEED (Ver. 2.0), 1-4X SPEED (Ver. 2.0),
1-8X SPEED (Ver. 2.0), 1-16X SPEED (Ver. 2.1)
DVD-R (DL): 2-4X SPEED (Ver. 3.0), 2-8X SPEED (Ver. 3.0)
DVD-RW: 1X SPEED (Ver. 1.1), 1-2X SPEED (Ver. 1.1),
2-4X SPEED (Ver. 1.2), 2-6X SPEED (Ver. 1.2)
+R (SL): 2.4X SPEED (Ver. 1.0), 2.4-4X SPEED (Ver. 1.1),
2.4-8X SPEED (Ver. 1.2), 2.4-16X SPEED (Ver. 1.3)
+R (DL): 2.4X SPEED (Ver. 1.0), 2.4-8X SPEED (Ver. 1.1)
+RW: 2.4X SPEED (Ver. 1.1), 2.4-4X SPEED (Ver. 1.2)

Maximum writing speed of discs
DVD-RAM: Up to 5x speed
DVD-R: Up to 12x speed
DVD-R DL: Up to 4x speed
DVD-RW: Up to 4x speed
+R: Up to 8x speed
+R DL: Up to 4x speed
+RW: Up to 4x speed
Maximum supporting speed of drive for each discs ; Refer to
"Recordable discs" (➡ above).

Note
• When recording or playing while copying, this unit may not copy at
the maximum speed.
• Depending on the condition of the disc, this unit may not copy at
the maximum speed.

Playable discs
DVD-RAM: DVD Video Recording format, AVCHD format, JPEG
DVD-R: DVD-Video format[1], AVCHD format[1], MP3[1, 2],
JPEG[1, 2], DivX[1, 2]
DVD-R DL (Dual Layer): DVD-Video format[1], AVCHD format[1],
MP3[1, 2], JPEG[1, 2], DivX[1, 2]
DVD-RW: DVD-Video format[1], DVD Video Recording format,
AVCHD format[1]
+R[1], +R DL (Double Layer)[1], +RW
DVD-Video, CD-Audio (CD-DA)
CD-R/CD-RW: CD-DA[1], MP3[1, 2], JPEG[1, 2], DivX[1, 2]

Optical pick-up System with 1 lens, 2 integration units
(662 nm wavelength for DVDs, 780 nm wavelength for CDs)

LASER specification
Class 1 LASER Product (Pickup)
Wave length:
CD 780 nm wave length
DVD 662 nm wave length
Laser power:
No hazardous radiation is emitted with the safety protection

Video
Video system:
PAL colour signal, 625 lines, 50 fields
NTSC colour signal, 525 lines, 60 fields
Recording system: MPEG2 (Hybrid VBR)/MPEG-4 AVC/H.264
Video in (PAL/NTSC):
AV1/AV2 (pin jack) 1 Vp-p 75 Ω, termination
S-Video in (PAL/NTSC):
AV1/AV2 (S terminal) 1 Vp-p 75 Ω, termination
Video out (PAL/NTSC):
Video Out (pin jack) 1 Vp-p 75 Ω, termination
S-Video out (PAL/NTSC):
S-Video Out (S terminal) 1 Vp-p 75 Ω, termination
Component video output
(PAL 576i/576p/720p/1080i, NTSC 480i/480p/720p/1080i)
Y: 1.0 Vp-p 75 Ω, termination
P_B: 0.7 Vp-p 75 Ω, termination
P_R: 0.7 Vp-p 75 Ω, termination

Audio
Recording system: Dolby Digital 2ch (XP, SP, LP, EP mode),
Linear PCM (XP mode),
Dolby Digital Max 5.1ch (DVB-T)
(DR mode, HG, HX, HE, HL mode),
HE-AAC 2ch (DVB-T) (DR mode),
MPEG 2ch (DR mode)
Audio in: AV1/AV2 (pin jack)
Input level: Standard: 0.5 Vrms, Full scale: 2.0 Vrms at 1 kHz
Input impedance: More than 10 kΩ
Audio out: Audio Out (pin jack)
Output level: Standard: 0.5 Vrms, Full scale: 2.0 Vrms at 1 kHz
Output impedance: Less than 1 kΩ
Digital audio out: Optical terminal (PCM, Dolby Digital, DTS, MPEG)
Coaxial terminal (PCM, Dolby Digital, DTS, MPEG)
HDMI terminal (PCM, Dolby Digital, DTS, MPEG)

HDMI Output 19 pin type A: 1 pc
HDMI™ (V.1.3a with Deep Colour, x.v.Colour™)
• This unit supports "HDAVI Control 4" function.

Internal HDD capacity 250 GB

DV input IEEE 1394 Standard, 4 pin : 1 pc

USB port Type A: 1 pc

SD Card Slot 1 pc

LAN (Ethernet) Port 10 BASE-T/100BASE-TX

Television system

Tuner system	Channel coverage
DVB-T New Zealand	21 to 69

RF converter output: Not provided

Others
Region code: #4
Operating temperature: 5 °C to 40 °C
Operating humidity range: 10 % to 80 % RH (no condensation)
Power supply: AC 220 to 240 V, 50 Hz
Power consumption: Approx. 37 W
Dimensions (W×H×D): 430 mm × 59 mm × 330 mm
Mass: Approx. 4.3 kg

Power consumption in standby mode:
Approx. 0.7 W (Power Save mode: ON)
Approx. 10 W (Power Save mode: OFF)

Reference

SD Card

Slot:	SD Memory Card slot: 1 pc
Compatible media:	SD Memory Card[3], SDHC Memory Card
Format:	FAT12, FAT16[4] (In case of SD Memory Card)
	FAT32[4] (In case of SDHC Memory Card)
Data that can be played:	JPEG, SD (Standard Definition)-Video[5],
	HD (High Definition)-Video

USB device

USB standard:	USB 2.0 High Speed
Format:	FAT16, FAT32
Data that can be played:	MP3, JPEG, DivX,
	SD (Standard Definition)-Video[6],
	HD (High Definition)-Video[7]

MP3

Playable media	HDD -R -R DL CD USB
File format	MP3 • Files must have the extension ".mp3" or ".MP3".
Compression rates	32 kbps to 320 kbps
Sampling rate	16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz
Number of folders	Maximum number of folders recognizable (except for HDD) : 300 folders (including the root folder)
Number of files	Maximum number of files recognizable (except for HDD) : 3000 files
ID3 tags	compatible

JPEG

Playable media	HDD RAM -R -R DL CD SD USB
File format	JPEG conforming DCF (Design rule for Camera File system) • Files must have the extension ".jpg" or ".JPG".
Compatible pixels	Between 34 × 34 and 8192 × 8192 pixels (Sub sampling is 4:2:2 or 4:2:0)
Thawing Time	Approx. 2 sec. in case of SD Card (8.1 M pixels, JPEG)
Number of folders	CD Maximum number of folders recognizable: 99 folders (including the root folder) HDD RAM -R -R DL SD USB Maximum number of folders recognizable: 300 folders (including the root folder)
Number of files	CD Maximum number of files recognizable: 999 files RAM -R -R DL SD USB Maximum number of files recognizable: 3000 files HDD Maximum number of files recognizable: 9999 files
MOTION JPEG Progressive JPEG	not supported

• It may take a few moments for still pictures to display.
• When there are many files and/or folders, some files may not display or be playable.

DivX

Playable media	-R -R DL CD USB
File format	DivX • Files must have the extension ".DIVX" or ".divx", ".AVI" or ".avi".
Number of folders	Maximum number of folders recognizable: 300 folders (including the root folder)
Number of files	Maximum number of files recognizable: 200 files
Support version	Official DivX® Certified product. Plays all versions of DivX® video (including DivX®6) with standard playback of DivX® media files. Certified to the DivX Home Theatre Profile. GMC (Global Motion Compensation) is not supported. DivX, DivX Certified, and associated logos are trademarks of DivX, Inc. and are used under license.

SD (Standard Definition)-Video

Playable media	SD[5] USB[6]
Codec	MPEG2 (SD-Video Entertainment Video Profile)
File format	SD-Video format conforming

HD (High Definition)-Video

Playable media	SD USB[7]
Codec	MPEG-4 AVC/H.264
File format	AVCHD format conforming

-R -R DL CD
• This unit is compatible with multi-session but reading or play of the disc may take time if there are a lot of sessions.
• Operation may take time to complete when there are many files (tracks) and/or folders and some files (tracks) may not display or be playable.
• English alphabet and Arabic numerals are displayed correctly. Other characters may not be displayed correctly.
• The display order on this unit may differ from how the order is displayed on a computer.
• Depending on how you create the disc (writing software), files (tracks) and folders may not play in the order you numbered them.
• This unit is not compatible with packet-write format.
• Depending on the recording conditions, the disc may not play.

Note
• Specifications are subject to change without notice.
• Useable capacity will be less. (SD card)

[1] Finalising is necessary for compatible playback.
[2] ISO9660 level 1 or 2 (except for extended formats) and Joliet This unit is compatible with multi-session/border (except for DVD-R DL).
This unit is not compatible with packet-write format.
[3] Includes miniSD cards. (A miniSD adaptor needs to be inserted.) Includes microSD cards. (A microSD adaptor needs to be inserted.)
[4] Long file name is unsupported.
[5] Video Recording conversion and transfer is possible from SD card to HDD or DVD-RAM disc.
After Video Recording conversion and transfer to HDD or DVD-RAM disc is completed, the playback becomes possible.
[6] Video Recording conversion and transfer is possible from USB device to HDD or DVD-RAM disc.
After Video Recording conversion and transfer to HDD or DVD-RAM disc is completed, the playback becomes possible.
[7] Video Recording conversion and transfer is possible from USB device to HDD.
After Video Recording conversion and transfer to HDD is completed, the playback becomes possible.

■ Structure of folders displayed by this unit

You can play MP3 and still pictures (JPEG) on this unit by making folders as shown below. However depending on the method of writing data (writing software), play may not be in the order you numbered the folders.

Structure of MP3 folders CD USB	
Prefix with 3-digit numbers in the order you want to play them.	Root **001 Folder** — 001track.mp3 (file=track) — 002track.mp3 — 003track.mp3 **002 Folder** **003 Folder** — 001track.mp3 — 002track.mp3 — 003track.mp3 — 004track.mp3 — 001track.mp3 — 002track.mp3 — 003track.mp3 Order of play

Structures of still picture folders CD USB	
Files inside a folder are displayed in the order they were updated or taken.	Root — P0000001.jpg — P0000002.jpg **002 Folder** — P0000003.jpg — P0000004.jpg — P0000005.jpg **003 Folder** — P0000006.jpg — P0000007.jpg — P0000008.jpg — P0000009.jpg **004 Folder** Order of play — P0000010.jpg — P0000011.jpg — P0000012.jpg

RAM	
The following 📁 can be displayed on this unit. ∗∗∗: Numbers XXX: Letters	
∗1 Still pictures on the root folder can also be displayed. ∗2 Folders can be created on other equipment. However, these folders cannot be selected as a copying destination. ● If a folder name or file name has been input using other equipment, the name may not be displayed properly or you may not be able to play or edit the data.	Root — XXXX∗∗∗∗.JPG ∗1 JPEG **DCIM**∗∗∗ ∗∗∗**XXXXX** — XXXX∗∗∗∗.JPG DCIM ∗2 ∗∗∗**XXXXX** — XXXX∗∗∗∗.JPG

SD

∗∗∗: Numbers   XXX: Letters

Card

DCIM
   ∗∗∗**XXXXX** (Picture folder)
      — XXXX∗∗∗∗.JPG

Any folder with JPEG files
e.g.,
001
  — P0000001.JPG
  — P0000002.JPG

SD_VIDEO   (MPEG2 folder)
  PRG∗∗∗
    — MOV∗∗∗.MOD
    — MOV∗∗∗.MOI
    — PRG∗∗∗.PGI

MGR_INFO (MPEG2 information folder)

PRIVATE
  AVCHD   (AVCHD folder)
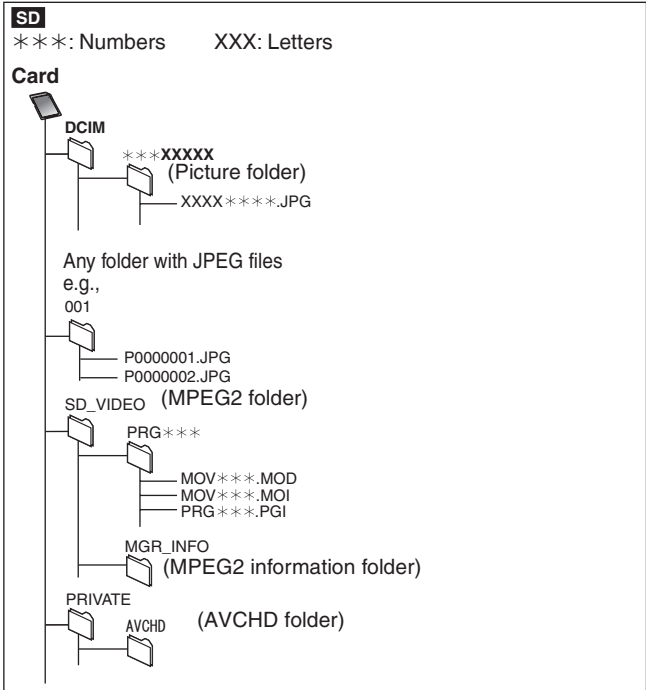
AVCHD
AVCHD is a new format (standard) for Panasonic's video camera, etc. that can be used to record and play high-resolution HD images.

Bitstream
This is the digital form of multi-channel audio data (e.g., 5.1 channel) before it is decoded into its various channels.

Decoder
A decoder restores the coded audio signals on discs to normal. This is called decoding.

Deep Colour
This unit incorporates HDMITM (V.1.3a with Deep Colour) technology that can reproduce greater colour gradation (4096 steps) when connected to a compatible TV.
You can enjoy exceptionally rich, natural-looking colours, with smooth, detailed gradation and minimal colour banding.
[A lower colour gradation (256 steps), without Deep Colour, will be reproduced if connected to a TV which does not support Deep Colour. The unit will automatically set appropriate output to suit the connected TV.]

DivX
DivX is a popular media technology created by DivX, Inc. DivX media files contain highly compressed video with high visual quality that maintains a relatively small file size.

DNS Server
A server which acts like a telephone directory and translates Internet domain names into IP addresses.

Dolby Digital
This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2-channel) audio, these signals can also be multi-channel audio.

Down-mixing
This is the process of remixing the multi-channel audio found on some discs into fewer channels.

Drive
In the instance of this unit, this refers to the hard disk (HDD), disc (DVD) and SD card (SD). These perform the reading and writing of data.

DTS (Digital Theatre Systems)
This surround system is used in many movie theatres. There is good separation between the channels, so realistic sound effects are possible.

Dynamic range
Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs.
Dynamic range compression means reducing the gap between the loudest and softest sounds. This means you can listen at low volumes but still hear dialogue clearly.

Film and video
DVD-Videos are recorded using either film or video. This unit can determine which type has been used, then uses the most suitable method of progressive output.

Film: Recorded at 25 frames per second (PAL discs) or 24 frames per second (NTSC discs). (NTSC discs recorded at 30 frames per second as well.) Generally appropriate for motion picture films.

Video: Recorded at 25 frames/50 fields per second. (PAL discs) or 30 frames/60 fields per second (NTSC discs). Generally appropriate for TV drama programmes or animation.

Finalise
A process that makes play of a recorded CD-R, CD-RW, DVD-R, etc. possible on equipment that can play such media.
After finalising, the disc becomes play-only and you can no longer record or edit. However, finalised DVD-RW can be formatted for recording again.

Folder
This is a place on the hard disk, disc, USB memory or SD card where groups of data are stored together. In the case of this unit, it refers to the place where still pictures (JPEG) and MPEG2, etc. are stored.

Formatting
Formatting is the process of making media such as DVD-RAM recordable on recording equipment.
You can format DVD-RAM, DVD-RW (only as DVD-Video format), +RW, SD cards and the HDD or unused +R and +R DL on this unit.
Formatting permanently deletes all contents.

Frames and fields
Frames refer to the single images that constitute the video you see on your television. Each frame consists of two fields.

Frame = Field + Field
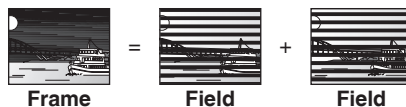
• A frame still shows two fields, so there may be some blurring, but picture quality is generally better.
• A field still shows less picture information so it may be rougher, but there is no blurring.

Gateway
IP address of the electronic device providing Internet access. Usually called a router IP address. (e.g., 192.168.0.1)

HDD (Hard disk drive)
This is a mass data storage device used in computers, etc. A disk with a surface that has been treated with magnetic fluid is spun and a magnetic head is brought in close proximity to facilitate the reading and writing of large amounts of data at high speed.

HDMI (High-Definition Multimedia Interface)
Unlike conventional connections, it transmits uncompressed digital video and audio signals on a single cable. This unit supports high-definition video output [720p (750p), 1080i (1125i), 1080p (1125p)] from HDMI AV OUT terminals. To enjoy high-definition video a high definition compatible television is required.

Hub
Used for connecting more than one device to the network.

IP address
A set of numbers which distinguish each PC on the network when, for example, connected to the Internet. When using a PC in a LAN to access a PC or device that is not included in the LAN, the IP address is called the local IP address. (e.g., 192.168.0.10)

JPEG (Joint Photographic Experts Group)
This is a system used for compressing/decoding colour still pictures. If you select JPEG as the storage system on digital cameras, etc., the data will be compressed to 1/10–1/100 of its original size. The benefit of JPEG is less deterioration in picture quality considering the degree of compression.

LAN (Local Area Network)
A group of linked devices in a company, school or home. Indicates the boundaries of a particular network.

LPCM (Linear PCM)
These are uncompressed digital signals, similar to those found on CDs.

MPEG2 (Moving Picture Experts Group)
A standard for efficiently compressing and expanding colour video. MPEG2 is a compression standard used for DVD and satellite based digital broadcasting.

MPEG-4AVC/H.264
A standard for efficiently compressing and expanding colour video. MPEG-4AVC/H.264 is an encoding method used for recording of the high definition videos.

MP3 (MPEG Audio Layer 3)
An audio compression method that compresses audio to approximately one tenth of its size without any considerable loss of audio quality.

Pan&Scan/Letterbox
In general, DVD-Video is produced with the intention that they be viewed on a widescreen television (16:9 aspect ratio), so images often don't fit regular (4:3 aspect ratio) televisions. Two styles of picture, "Pan&Scan" and "Letterbox", deal with this problem.

Pan&Scan: The sides are cut off so the picture fills the screen.

Letterbox: Black bands appear at the top and bottom of the picture so the picture itself appears in an aspect ratio of 16:9.

Progressive/Interlace
Interlace is a conventional image signal that displays the image in 2 phases by splitting the display into odd and even scans. Progressive will display whole image in 1 scan. Therefore, it will give high definition image without flickering compared with interlace.

Protection
You can prevent accidental deletion by setting writing protection or deletion protection.

RGB
This refers to the three primary colours of light, red (R), green (G), and blue (B) and also the method of producing video that uses them. By dividing the video signal into the three colours for transmission, noise is reduced for even higher quality images.

Router
Distinguishes the IP address assigned to each device, such as the PC, and relays the flow of data within the network.

Sampling frequency
Sampling is the process of converting the heights of sound wave (analogue signal) samples taken at set periods into digits (digital encoding). Sampling frequency is the number of samples taken per second, so larger numbers mean more faithful reproduction of the original sound.

Signal Quality
This is the guide for checking the aerial direction. The numbered values displayed do not indicate the strength of the signal, but the quality of the signal (the signal to noise ratio, or "S/N"). The channels you can receive are affected by weather conditions, seasons, time (day/night), region, length of the cable that is connected to the aerial, etc.

Subnet mask
Enables efficient network use. A set of numbers which identify which part of the IP address allocated to every device connected to the router is the network portion.

Thumbnail
This refers to a miniature representation of a picture used to display multiple pictures in the form of a list.

VIERA CAST
An information service unique to Panasonic where specific Web sites can be viewed on this unit by connecting to the Internet without using a PC.

x.v.Colour™
x.v.Colour™ is a name for devices that are compatible with the xvYCC format, an international standard for expanded colour in motion pictures, and that follow the rules for signal transmission. You can enjoy vivid colours of wider colour ranges for a more realistic picture when connected to a TV that supports the x.v.Colour™ with HDMI cable.

1080i
In one high definition image, 1080 (1125) alternating scan lines pass every 1/50th of a second to create an interlace image. Because 1080i (1125i) more than doubles current television broadcasts of 480i (525i), the detail is much clearer and creates a more realistic and rich image.

1080p
In one high definition image, 1080 (1125) scan lines pass at the same time every 1/50th of a second to create a progressive image. Since progressive video does not alternate scan lines like interlace, there is a minimal amount of screen flicker.

720p
In one high definition image, 720 (750) scan lines pass at the same time every 1/50th of a second to create a progressive image. Since progressive video does not alternate scan lines like interlace, there is a minimal amount of screen flicker.

Safety precaution

Placement

Set the unit up on an even surface away from direct sunlight, high
temperatures, high humidity, and excessive vibration. These
conditions can damage the cabinet and other components, thereby
shortening the unit's service life.
Do not place heavy items on the unit.

Voltage

Do not use high voltage power sources. This can overload the
unit and cause a fire.
Do not use a DC power source. Check the source carefully when
setting the unit up on a ship or other place where DC is used.

AC mains lead protection

Ensure the AC mains lead is connected correctly and not
damaged. Poor connection and lead damage can cause fire or
electric shock. Do not pull, bend, or place heavy items on the lead.
Grasp the plug firmly when unplugging the lead. Pulling the AC
mains lead can cause electric shock.
Do not handle the plug with wet hands. This can cause electric
shock.

Foreign matter

Do not let metal objects fall inside the unit. This can cause electric
shock or malfunction.
Do not let liquids get into the unit. This can cause electric shock
or malfunction. If this occurs, immediately disconnect the unit from
the power supply and contact your dealer.
Do not spray insecticides onto or into the unit. They contain
flammable gases which can ignite if sprayed into the unit.

Service

Do not attempt to repair this unit by yourself. If sound is
interrupted, indicators fail to light, smoke appears, or any other
problem that is not covered in these instructions occurs, disconnect
the AC mains lead and contact your dealer or an authorized service
centre. Electric shock or damage to the unit can occur if the unit is
repaired, disassembled or reconstructed by unqualified persons.

Extend operating life by disconnecting the unit from the power
source if it is not to be used for a long time.

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Reference

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Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union. If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

The manufacturer accepts no responsibility and offers no compensation for loss of recorded or edited material due to a problem with the unit or recordable media, and accepts no responsibility and offers no compensation for any subsequent damage caused by such loss. Examples of causes of such losses are

- A disc recorded and edited with this unit is played in a DVD Recorder or computer disc drive manufactured by another company.
- A disc used as described above and then played again in this unit.
- A disc recorded and edited with a DVD Recorder or computer disc drive manufactured by another company is played in this unit.

Panasonic Corporation
Web Site: http://panasonic.net

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